AIR TO WATER HEAT PUMP SERVICE MANUAL -VERSATI SERIES

T1/R410A/50Hz&60Hz (GC201202-I)

GREE ELECTRIC APPLIANCES, INC.OF ZHUHAI

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PRODUCT

PRODUCT

1 MODELS LIST

1.1 Main Unit

Model				Nominal Capacity	Power Supply	Appearance	
Refrigerant	Model Name		Product Code	kW	V,Ph,Hz	Outdoor Unit	Indoor Unit
R410A	GRS-CQ6.0Pd/Na-K	GRS-CQ6.0Pd/Na-K(I)	ER010N1050	6.2	220-240V, ~,50Hz		
		GRS-CQ6.0Pd/Na-K(O)	ER010W1050				
	GRS-CQ8.0Pd/Na-K	GRS-CQ8.0Pd/Na-K(I)	ER010N1040	8.5			
		GRS-CQ8.0Pd/Na-K(O)	ER010W1040				
	GRS-CQ10Pd/Na-K	GRS-CQ10Pd/Na-K(I)	ER010N1000	10			
		GRS-CQ10Pd/Na-K(O)	ER010W1000				
	GRS-CQ12Pd/Na-K	GRS-CQ12Pd/Na-K(I)	ER010N1020	12			
		GRS-CQ12Pd/Na-K(O)	ER010W1020				
	GRS-CQ14Pd/Na-K	GRS-CQ14Pd/Na-K(I)	ER010N1030	13.5			
		GRS-CQ14Pd/Na-K(O)	ER010W1030				
	GRS-CQ16Pd/Na-K	GRS-CQ16Pd/Na-K(I)	ER010N1010	16			
		GRS-CQ16Pd/Na-K(O)	ER010W1010				
	GRS-CQ12Pd/Na-M	GRS-CQ12Pd/Na-M(I)	ER010N1060	12	380-415V, 3N~,50Hz		
		GRS-CQ12Pd/Na-M(O)	ER010W1060				
	GRS-CQ14Pd/Na-M	GRS-CQ14Pd/Na-M(I)	ER010N1070	14			
		GRS-CQ14Pd/Na-M(O)	ER010W1070				
	GRS-CQ16Pd/Na-M	GRS-CQ16Pd/Na-M(I)	ER010N1080	15			
		GRS-CQ16Pd/Na-M(O)	ER010W1080				
	GRS-CQ16Pd/Na-H	GRS-CQ16Pd/Na-H(I)	ER010N1090	15	380V,3N~, 60Hz		
		GRS-CQ16Pd/Na-H(O)	ER010W1090				

Note:1Ton =12000Btu/h = 3.517kW

1.2 Water Tank

Model	Product Code	Nominal Cubage(L)	Appearance
SXVD200LCJ/A-K	ER20000160	200	
SXVD200LCJ/A-M	ER20000240	200	
SXVD200LCJ/A-H	ER20000280	200	
SXVD300LCJ/A-K	ER20000180	300	
SXVD300LCJ/A-M	ER20000250	300	
SXVD300LCJ/A-H	ER20000300	300	
SXVD200LCJ2/A-K	ER20000170	200	
SXVD200LCJ2/A-M	ER20000260	200	
SXVD200LCJ2/A-H	ER20000290	200	
SXVD300LCJ2/A-K	ER20000190	300	
SXVD300LCJ2/A-M	ER20000270	300	
SXVD300LCJ2/A-H	ER20000310	300	

2 NOMENCLATURE

2.1 Main Unit

G	RS	-	C	Q	16	Pd	/	Na	-	K	(I)
1	2		3	4	5	6		7		8	9

NO.	Description	Options
1	GREE Air to water heat pump	-
2	Heat Pump Water Heater	-
3	Heating Mode	Circulating
4	Multi Heat pump	-
5	Nominal Heating capacity	16=16 kW
6	DC Inverter	-
7	Refrigerant Type	Na-R410A
8	Power Supply	K=220-240V,~,50Hz; M=380-415V,3N~,50Hz; H=380V,3N~,60Hz
9	Indoor Unit	I-Indoor unit, O-outdoor unit

2.2 Water Tank

SX	V	D	200	L	C	J2	/	A	-	K
1	2	3	4	5	6	7		8		9

NO.	Description	Options
1	Tank Used in Heat Pump	/
2	Heat Pump Water Tank for GMV Units	/
3	Electric Heater	/
4	Volume of Tank	/
5	Stand	/
6	Pressure-Resistant	/
7	Static Heating with Dual Coiled Pipe	J=Static Heating with single Coiled Pipe ; J2=Static Heating with Dual Coiled Pipe
8	Design Sequence Number	
9	Power Supply	K=220-240V,~,50Hz; M=380-415V,3N~,50Hz; H=380V,3N~,60Hz

3 FUNCTION

3.1 Cooling

In cooling mode: the refrigerant is condensed in the outdoor unit and evaporated in the indoor unit. Via the heat exchange with water in the indoor unit, the temperature of water decreases and it releases heat while the refrigerant absorbs heat and evaporates. With the help of wired controller, the outflow temperature can meet the user's requirement. Through the control of valve, the low-temperature water in the system is connected with indoor fan coil and underground pipe, and exchanges heat with the indoor air so that the indoor temperature decreases to the required range.

3.2 Heating

In heating mode: the refrigerant evaporates in the outdoor unit and is condensed in the indoor unit. Via the heat exchange with water in the indoor unit, the water absorbs heat and its temperature increases while the refrigerant releases heat and is condensed. With the help of wired controller, the outflow temperature can meet the user's requirement. Through the control of valve, the high-temperature water in the system is connected with indoor fan coil and underground pipe, and exchanges heat with the indoor air so that the indoor temperature increases to the required range;

3.3 Water Heating

In water heating mode: the refrigerant evaporates in the outdoor unit and is condensed in the indoor unit. Via the heat exchange with water in the indoor unit, the water absorbs heat and its temperature increases while the refrigerant releases heat and is condensed. With the help of wired controller, the outflow temperature can meet the user's requirement. Through the control of valve, the high-temperature water in the system is connected with the coil pipe of bearing water tank, and exchanges heat with the water in the water tank so that the temperature of water tank increases to the required range.

3.4 Cooling +Water Heating

When cooling mode exists together with the water heating mode, the user can set the priority of these two modes based on the needs. The default priority is heat pump. That is under the default setting, if cooling mode exists together with the water heating mode, the heat pump gives priority to cooling. In that case, water heating can only realized with e-heater of the water tank. Inversely, the heat pump gives priority to water heating and switches to cooling after finishing water heating.

3.5 Heating+ Water Heating

When heating mode exists together with the water heating mode, the user can set the priority of these two modes based on the needs. The default priority is heat pump. That is under the default setting, if heating mode exists together with the water heating mode, the heat pump gives priority to heating. In that case, water heating can only realized with e-heater of the water tank. Inversely, the heat pump gives priority to water heating and switches to heating after finishing water heating.

3.6 Emergency Mode

Emergency mode: this mode is only available for heating and water heating. When the outdoor unit stops due to malfunction, it will enter the corresponding emergency mode; as to heating mode, after entering the emergency mode, heating can only be realized through e-heater of the indoor unit. When the setting outflow temperature or indoor temperature is reached, the e-heater of indoor unit will stop running; as to water heating mode, the e-heater of indoor unit stops while the e-heater of water tank runs. When the setting temperature or water tank is reached, the e-heater will stop running.

3.7 Quick Water Heating

In quick water heating mode, the unit runs according to the water heating control of heat pump and the e-heater of water tank runs at the same time.

3.8 Holiday Mode

This mode is only available for heating mode. This mode is set to keep indoor temperature or outflow temperature in a certain range, so as to prevent water system of the unit from freezing or protect certain indoor articles from freezing damage. (This mode requires installing indoor temperature sensor). When the outdoor unit stops due to malfunction, the two e-heaters of the unit will run.

3.9 Forced Operation Mode

This mode is only used for refrigerant recovery and debugging of the unit.

3.10 Silent Mode

Silent mode is available in cooling, heating and water heating mode. In silent mode, the outdoor unit will reduce the running noise via automatic control.

3.11 Disinfection Mode

In this mode, the water heating system can be disinfected. When starting up the disinfection function and setting corresponding time to meet the requirement of disinfection mode, the function will start. After the setting temperature is reached, this mode will terminate.

3.12 Weather-dependent Heating Mode

This mode is only available for space heating. In weather-dependent heating mode, the indoor temperature is detected and controlled automatically.

4 PRODUCT DATA

4.1 Product Data at Rated Condition

Due to continues improvement on the products, the specifications listed above are subject to change without notice, and the ones on the products nameplate should be referred to as final.

4.1.1 Outdoor Unit

AIR TO WATER HEAT PUMP							
Model			GRS-CQ6.0Pd/Na-K(O)	GRS-CQ8.0Pd/Na-K(O)	GRS-CQ10Pd/Na-K(O)	GRS-CQ12Pd/Na-K(O)	GRS-CQ14Pd/Na-K(O)
Product Code			ER010W1050	ER010W1040	ER010W1000	ER010W1020	ER010W1030
Power Supply		V,Ph,Hz	220-240V,~,50Hz				
Capacity[1]	Heating(floor heating)	kW	6.2	8.5	10	12	13.5
	Cooling(floor cooling)	kW	5.5	9.0	10.5	14	15
Power Input[1]	Heating(floor heating)	kW	1.5	2.10	2.50	2.79	3.21
	Cooling(floor cooling)	kW	1.6	2.50	3.14	3.68	4.29
Capacity[2]	Heating(Fan coil or Radiator)	kW	5.5	8.0	9.0	11.5	12.5
	Cooling(for Fan coil)	kW	4	6.5	8.0	10	11
Power Input[2]	Heating(Fan coil or Radiator)	kW	1.83	2.65	2.90	3.38	3.73
	Cooling(for Fan coil)	kW	1.54	2.50	3.08	3.45	3.93
Refrigerant	Type	-	R410A	R410A	R410A	R410A	R410A
	Charge	g	1700	2000	2000	3300	3300
Sanitary Water Temperature		℃	40~80	40~80	40~80	40~80	40~80
Sound Pressure Level		dB(A)	59	59	59	59	59
Gas Piping Connection		mm	12.7	15.9	15.9	15.9	15.9
Liquid Piping Connection		mm	6.35	9.52	9.52	9.52	9.52
Outline Dimensions (W×D×H)		mm	921×427×791	921×427×791	921×427×791	950×412×1253	950×412×1253
Net Weight		kg	66	69	69	99	99

AIR TO WATER HEAT PUMP							
Model			GRS-CQ16Pd/ Na-K(O)	GRS-CQ12Pd/ Na-M(O)	GRS-CQ14Pd/ Na-M(O)	GRS-CQ16Pd/ Na-M(O)	GRS-CQ16Pd/ Na-H(O)
Product Code			ER010W1010	ER010W1060	ER010W1070	ER010W1080	ER010W1090
Power Supply		V,Ph,Hz	220-240V,~,50Hz	380-415V,3N~,50Hz			380V,3N~,60Hz
Capacity[1]	Heating(floor heating)	kW	16	12	14	15	15
	Cooling(floor cooling)	kW	15.5	14	15	15.5	15.5
Power Input[1]	Heating(floor heating)	kW	3.95	2.67	3.33	3.7	3.7
	Cooling(floor cooling)	kW	4.63	3.68	4.29	4.43	4.43
Capacity[2]	Heating(Fan coil or Radiator)	kW	14	11	12	14	14
	Cooling(for Fan coil)	kW	11.5	10	10.5	11	11
Power Input[2]	Heating(Fan coil or Radiator)	kW	4.59	3.24	3.58	4.38	4.38
	Cooling(for Fan coil)	kW	4.6	3.45	3.75	4.07	4.07
Refrigerant	Type	-	R410A	R410A	R410A	R410A	R410A
	Charge	g	3300	3500	3500	3500	3500
Sanitary water Temperature		℃	40~80	40~80	40~80	40~80	40~80
Sound Pressure Level		dB(A)	62	59	59	62	62
Gas Piping Connection		mm	15.9	15.9	15.9	15.9	15.9
Liquid Piping Connection		mm	9.52	9.52	9.52	9.52	9.52
Outline Dimensions (W×D×H)		mm	950×412×1253	950×412×1253	950×412×1253	950×412×1253	950×412×1253
Net Weight		kg	99	99	99	99	99

Notes:

[1] Capacities and power inputs are based on the following conditions:
a. Cooling conditions
Indoor Water Temperature 23°C/18°C;
Outdoor Air Temperature 35°CDB/24°CWB
b. Heating conditions
Indoor Water Temperature 30°C/35°C;
Outdoor Air Temperature 7°CDB/6°CWB
c. Standard piping length 7.5m

[2] Capacities and power inputs are based on the following conditions:
a. Cooling conditions
Indoor Water Temperature 12°C/7°C;
Outdoor Air Temperature 35°CDB/24°CWB
b. Heating conditions
Indoor Water Temperature 40°C/45°C;
Outdoor Air Temperature 7°CDB/6°CWB
c. Standard piping length 7.5m

4.1.2 Indoor Unit

INDOOR UNIT								
Model				GRS-CQ6.0Pd/Na-K(I)	GRS-CQ8.0Pd/Na-K(I)	GRS-CQ10Pd/Na-K(I)	GRS-CQ12Pd/Na-K(I)	GRS-CQ14Pd/Na-K(I)
Product Code				ER010N1050	ER010N1040	ER010N1000	ER010N1020	ER010N1030
Power Supply			V,Ph,Hz	220-240V,~,50Hz				
Rated input (indoor only)			W	3200	6200			
Liquid side diameter			mm (inch)	6.35(1/4)	9.52(3/8)			
Gas side diameter			mm (inch)	12.7(1/2)	15.9(5/8)			
Operation Range(Outflow water temp.)		Cooling (FCU)		7-25				
		Cooling (Floor)		18-25				
		Heating (FCU)		25-55(High Temperature Cycle)				
		Heating (Floor)		25-45 (Low Temperature Cycle)				
Main components	pump	Type	-	Water-cooled				
		Nr. of speed	-	3				
		Power input	W	200				
		Water flow limit	LPM	12				
	Expansion Vessel	Volume	Liter	10				
		Water Pressure (Max)	Bar	3				
		Water Pressure (Pre)	Bar	1				
	Electric Heater	Type	-	Sheath				
		Material	-	Stainless Steel				
		Operation	-	Automatic				
		Steps	-	2				
		Capacity Combination	KW	1.5+1.5	3+3			
		Power input	V,Ph,Hz	230V,~,50Hz				
	Heat Exchanger	Type	-	Brazed Plate HEX				
		Quantity	-	1				
Outline Dimension (W×D× H)			mm	900×500×324				
Net Weight			kg	52	52	52	53	53

INDOOR UNIT								
Model				GRS-CQ16Pd/ Na-K(I)	GRS-CQ12Pd/ Na-M(I)	GRS-CQ14Pd/ Na-M(I)	GRS-CQ16Pd/ Na-M(I)	GRS-CQ16Pd/ Na-H(I)
Product Code				ER010N1010	ER010N1060	ER010N1070	ER010N1080	ER010N1090
Power Supply			V,Ph,Hz	220-240V,~,50Hz	380-415V,3N~,50Hz			380V,3N~,60Hz
Rated input (indoor only)			W	6200				6200
Liquid side diameter			mm (inch)	9.52(3/8)				9.52(3/8)
Gas side diameter			mm (inch)	15.9(5/8)				15.9(5/8)
Operation Range(Outflow water temp.)		Cooling (FCU)	℃	7-25				7-25
		Cooling (Floor)	℃	18-25				18-25
		Heating (FCU)	℃	25-55(High Temperature Cycle)				
		Heating (Floor)	℃	25-45 (Low Temperature Cycle)				
Main components	pump	Type	-	Water-cooled				-
		Nr. of speed	-	3				-
		Power input	W	200				-
		Water flow limit	LPM	12				-
	Expansion Vessel	Volume	Liter	10				10
		Water Pressure (Max)	Bar	3				3
		Water Pressure (Pre)	Bar	1				1
	Electric Heater	Type	-	Sheath				Sheath
		Material	-	Stainless Steel				Stainless Steel
		Operation	-	Automatic				Automatic
		Steps	-	2	1			1
		Capacity Combination	KW	3+3	6			6
		Power input	V,Ph,Hz	230V,~,50Hz	400V,3N~,50Hz			380V,3N~,60Hz
	Heat Exchanger	Type	-	Brazed Plate HEX				Brazed Plate HEX
		Quantity	-	1				1
Outline Dimension(W×D× H)			mm	900×500×324				900×500×324
Net Weight			kg	53	53	53	53	49

4.1.3 Water Tank (optional)

Models			SXVD200LCJ/A-K	SXVD200LCJ2/A-K	SXVD300LCJ/A-K	SXVD300LCJ2/A-K
Product Code			ER20000160	ER20000170	ER20000180	ER20000190
Models			SXVD200LCJ/A-M	SXVD200LCJ2/A-M	SXVD300LCJ/A-M	SXVD300LCJ2/A-M
Product Code			ER20000240	ER20000260	ER20000250	ER20000270
Models			SXVD200LCJ/A-H	SXVD200LCJ2/A-H	SXVD300LCJ/A-H	SXVD300LCJ2/A-H
Product Code			ER20000280	ER20000290	ER20000300	ER20000310
Water Tank Volume		L	200		300	
Electric Heater Power		W	3000			
Cool Water Inlet Pipe	Outer diameter	mm	DN15			
		inch	1/2			
	Screw thread spec		1/2″Female BSP			
Hot Water Outlet Pipe	Outer diameter	mm	DN15			
		inch	1/2			
	Screw thread spec		1/2″Female BSP			
Circulation Water Inlet/Outlet Pipe	Outer diameter	mm	/	DN20	/	DN20
		inch	/	3/4	/	3/4
	Screw thread spec		/	3/4″Female BSP	/	3/4″Female BSP
Water Inlet/ Outlet(Heat Pump) Pipe	Outer diameter	mm	DN20			
		inch	3/4			
	Screw thread spec		3/4″Female BSP			
Outline Dimension(ΦD×H)		mm	Φ540×1595		Φ620×1620	
Net Weight		kg	68	71	82	87

Note :

Tank is optional part, and the specific model of tank shall be selected according to local weather and professional suggestions.

4.2 Operation Range

Mode	Range of Outdoor Temperature(℃)
Heating	-20~35
Cooling	10~48
Water heating	-20~45

4.3 Electrical Data

Model	Power Supply	Leakage Switch	Minimum Sectional Area of Earth Wire	Minimum Sectional Area of Power Supply Wire
	V,Ph,Hz	(A)	(mm^2)	(mm^2)
GRS-CQ6.0Pd/Na-K(I)	220-240V,~,50Hz	32	4	3×4
GRS-CQ8.0Pd/Na-K(I)		50	10	3×10
GRS-CQ10Pd/Na-K(I)		50	10	3×10
GRS-CQ12Pd/Na-K(I)		50	10	3×10
GRS-CQ14Pd/Na-K(I)		50	10	3×10
GRS-CQ16Pd/Na-K(I)		50	10	3×10
GRS-CQ6.0Pd/Na-K(O)		32	4	3×4
GRS-CQ8.0Pd/Na-K(O)		32	4	3×4
GRS-CQ10Pd/Na-K(O)		32	4	3×4
GRS-CQ12Pd/Na-K(O)		40	6	3×6
GRS-CQ14Pd/Na-K(O)		40	6	3×6
GRS-CQ16Pd/Na-K(O)		40	6	3×6
GRS-CQ12Pd/Na-M(I)	380-415V,3N~,50Hz	16	1.5	5×1.5
GRS-CQ14Pd/Na-M(I)		16	1.5	5×1.5
GRS-CQ16Pd/Na-M(I)		16	1.5	5×1.5
GRS-CQ12Pd/Na-M(O)		25	2.5	5×2.5
GRS-CQ14Pd/Na-M(O)		25	2.5	5×2.5
GRS-CQ16Pd/Na-M(O)		25	2.5	5×2.5
GRS-CQ16Pd/Na-H(I)	380V,3N~,60Hz	16	1.5	5×1.5
GRS-CQ16Pd/Na-H(O)		25	2.5	5×2.5

Note:

①. Leakage Switch is necessary for additional installation. If circuit breakers with leakage protection are in use, action response time must be less than 0.1 second, leakage circuit must be 30mA.

②. The above selected power cable diameters are determined based on assumption of distance from the distribution cabinet to the unit less than 75m. If cables are laid out in a distance of 75m to 150m, diameter of power cable must be increased to a further grade.

③. The power supply must be of rated voltage of the unit and special electrical line for air-conditioning.

④. All electrical installation shall be carried out by professional technicians in accordance with the local laws and regulations.

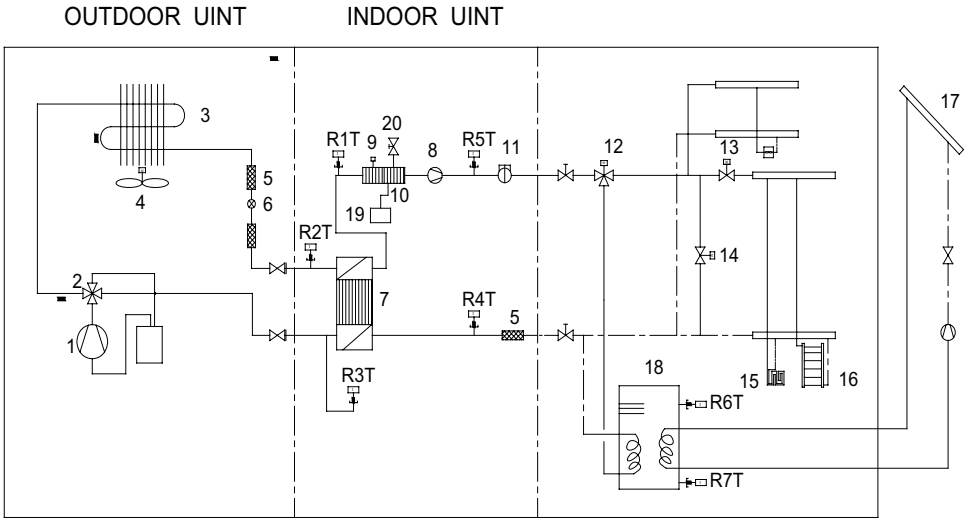
⑤. Ensure safe grounding and the grounding wire shall be connected with the special grounding equipment of the building and must be installed by professional technicians.

⑥. The specifications of the breaker and power cable listed in the table above are determined based on the maximum power (maximum amps) of the unit.

⑦. The specifications of the power cable listed in the table above are applied to the conduit-guarded multi-wire copper cable (like, YJV XLPE insulated power cable) used at 40℃ and resistible to 90℃(see IEC 60364-5-52). If the working condition changes, they should be modified according to the related national standard.

⑧. The specifications of the breaker listed in the table above are applied to the breaker with the working temperature at 40℃. If the working condition changes, they should be modified according to the related national standard.

5 PIPING DIAGRAM



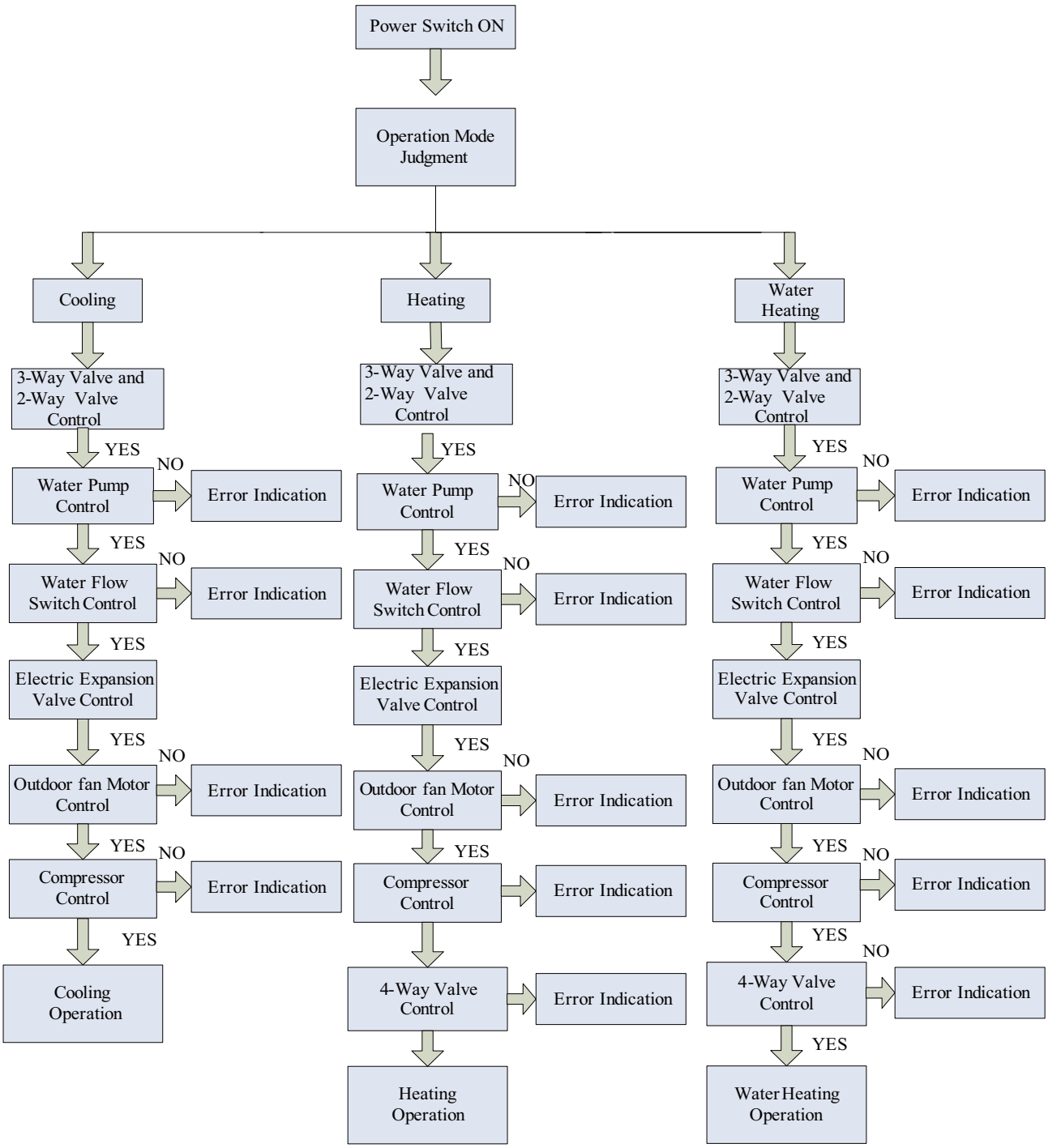
1 compressor
2 four-way valve
3 finned coil exchanger
4 fan motor
5 filter
6 electronic expansion valve
7 plate heat exchanger
8 pump
9 air-vent valve
10 electric heater
11 flow switch
12 3-way valve
13 2-way valve
14 by-pass valve
15 under-floor heating
16 radiator
17 other thermal system
18 water tank
19 expansion tank
20 safety valve
R1T plate outlet temperature sensor
R2T Liquid line temperature sensor
R3T gas line temperature sensor
R4T returning water temperature sensor
R5T leaving water temperature sensor
R6T water tank temperature sensor 1
R7T water tank temperature sensor 2

Note: The water pump of the unit GRS-CQ16Pd/Na-H should be field provided by the installation agent.

CONTROL

UNITS CONTROL

1 OPERATION FLOWCHART



2 MAIN LOGIC

2.1 Defrosting Mode

2.1.1 The condition of start defrosting mode:

Under heating mode or water heating mode, if the accumulative running time of compressor is over the set interval time of defrosting(default 50min),and the defrosting temperature(outdoor unit heat exchanger temperature) is lower than the set starting temperature(default -4℃),the unit will start running defrosting, and the 4-way valve will shut off and the outdoor fan will stop.

2.1.2 The condition of quit defrosting mode:

Under defrosting mode, if the continual defrosting time is over the set continual time of defrosting(default 10min) ,or the defrosting temperature is over the set stopping temperature(default 15℃) ,the unit will restart

running heating mode, and the 4-way valve will turn on and the outdoor fan will run.

2.2 Water-side Auto Anti-freezing in Winter

In low temperature, When the compressor stops (including normal or abnormal stop of the unit), if auxiliary electric heater water-out temperature is lower than 5℃, 30s later the water pump will automatically operate and 120s later the compressor operates.

When outlet water temperature is less than 20℃,the unit will operate while it will stop when the outlet water temperature is more than 20℃.

However, if there is malfunction of the unit, anti-freezing operation will be started by indoor electric heater (two sets).

2.3 Control of Heating Tape on Chassis

When heating operation starts in low temperature, in order to prevent the condensation water generated by defrosting from freezing in chassis, which will incur malfunction of drainage, the heating tape is installed in chassis. If the ambient temperature is lower than 0℃, when the compressor operates, electric heating will operate; if the ambient temperature is higher than 2℃ or compressor stops, the electric heating will stop.

2.4 Control of Fan

In cooling, the outdoor fan will adjust fan speed according to pressure detected by high pressure sensor.

In heating or water heating, the fan will adjust fan speed according to ambient temp.

2.5 Control of Compressor

Output capacity of compressor is adjusted according to the comparison of current outlet water temperature and setting outlet water temperature or the comparison of indoor ambient temperature and setting indoor temperature;

The output capacity will not be adjusted within 6 min after the compressor operates; once compressor stops, it can't be started within at least 3 min.

2.6 Control of Electric Expansion Valve

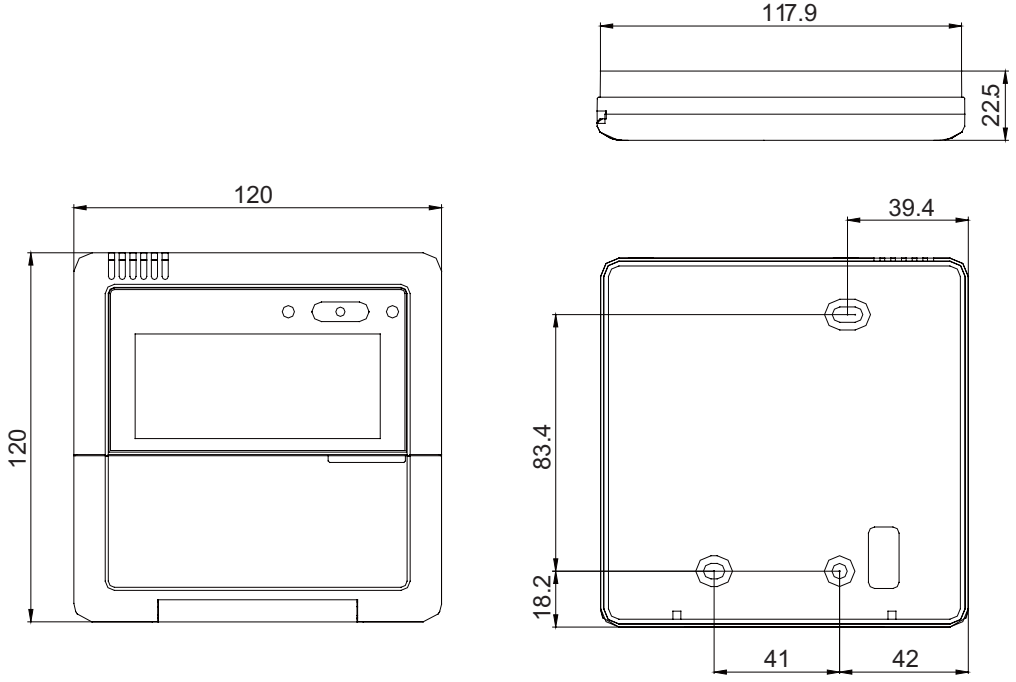
In heating or water heating operation, electric expansion valve is adjusted according to superheat degree of outdoor heat exchanger.

In cooling operation, electric expansion valve is adjusted according to superheat degree of plate-type heat exchanger.

Electric expansion valve will not be adjusted within 3 min after the unit operates.

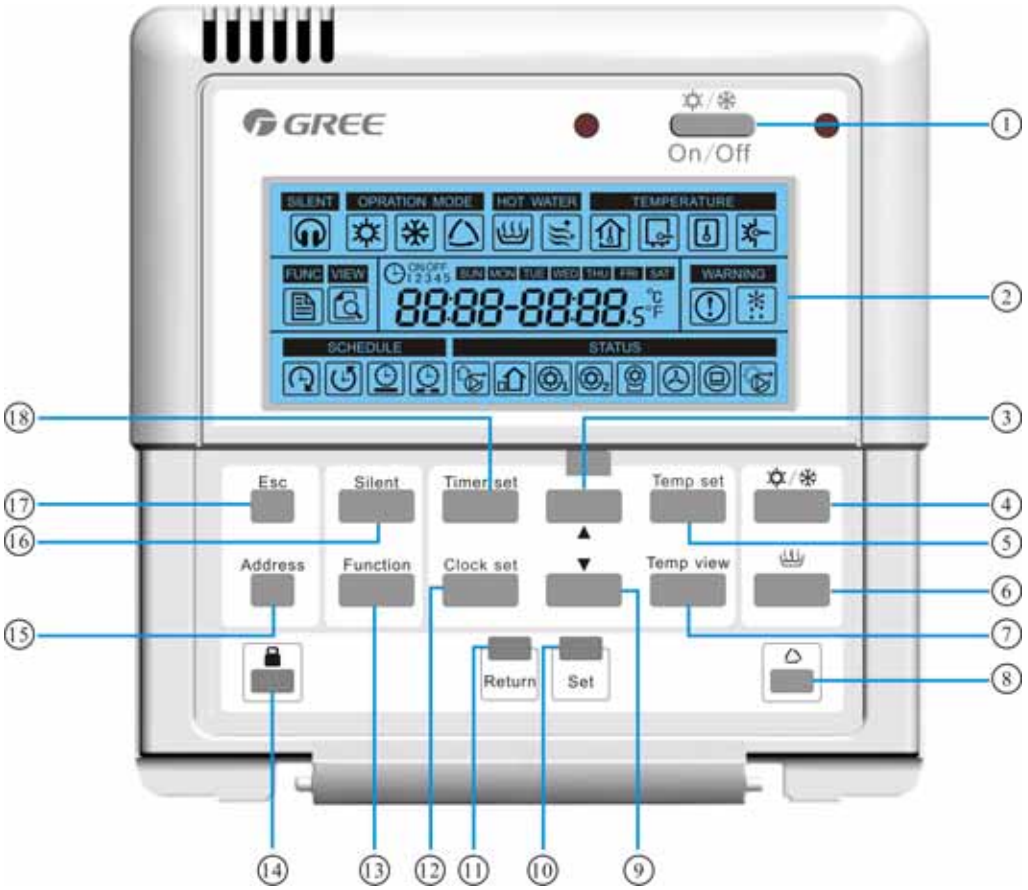
3 WIRED CONTROLLER

3.1 Dimension



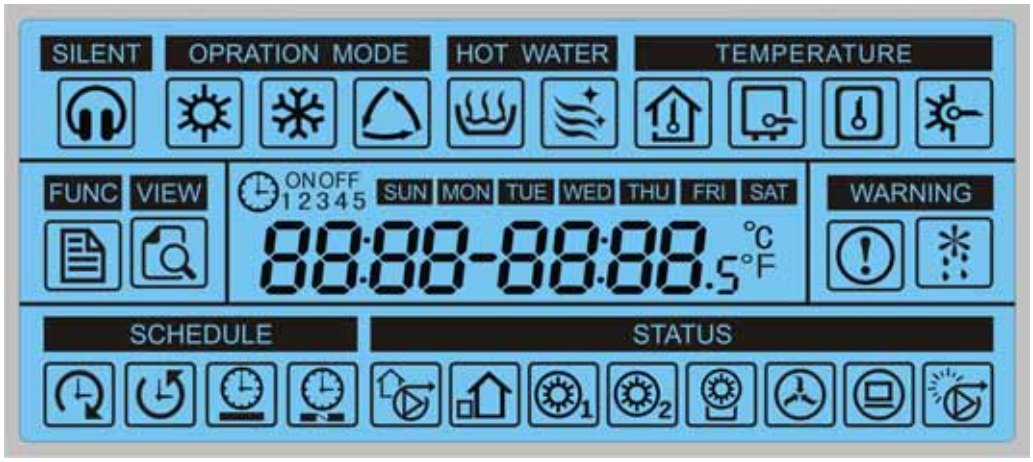
3.2 Function

3.2.1 Operation View



NO.	Name	Function description
①	Heating/Cooling on/off button	Press the button to turn on or turn off Heating operation or Cooling operation
②	LCD display	Display unit information
③	Increasing button	Press this button to increase the parameter(winking)
④	Heating/Cooling button	Press the button to select heating or cooling operation
⑤	Temperature set button	Press the button to active temperature set
⑥	Sanitary heating on/off button	Press the button to turn on or off water heating
⑦	Temperature view button	Press the button to view the temperature
⑧	Weather-dependent mode button	Press this button to turn on or off weather depending operation mode
⑨	Decreasing button	Press this button to decrease the parameter(winking)
⑩	Set button	Press the button to save parameter or enter the next menu
⑪	Return button	Press this button to return to the previous menu
⑫	Clock setting button button	Press this button to set the clock
⑬	Programming button	Press this button to set the engineer parameter
⑭	Child lock button	Press this button to lock or unlock the button
⑮	Address setting button	Press this button to set the unit address
⑯	Silent mode on/off button	Press this button to start up or stop Silent operation
⑰	ESC button	Press this button to return to the main menu
⑱	Timer setting button	Press this button to set timer function

3.2.2 Display View



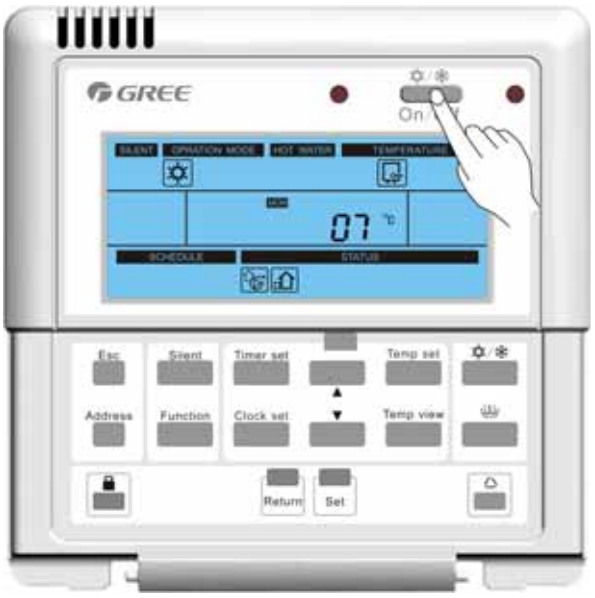
Icon.	Name	Function description
	Silent mode	This icon indicates that the silent mode is active.
	Heating mode	This icon indicates that the heating mode is active. In holiday mode or urgent heating model, the icon will flashing.
	Cooling mode	This icon indicates that the cooling mode is active.
	Weather depending mode	This icon indicates that the weather depending mode is active. and in Timing Silent mode, this icon will flashing;
	Sanitary heating mode	This icon indicates that the sanitary heating mode is active. In urgent sanitary heating model, the icon will flash.
	Disinfection mode	This icon indicates that the disinfection mode is active. If disinfection isn't successful, the icon will flash.
	Room air temperature	This icon indicates that you are setting target room air temperature or current room air temperature is displaying. In Timing Temperature mode, this icon will flashing;
	Water-Leaving temperature	This icon indicates that you are setting target leaving temperature or current leaving temperature is displaying. In Timing Temperature mode, this icon will flashing;
	Sanitary water tank temperature	This icon indicates that you are setting target sanitary water tank temperature.
	Solar leaving temperature	This icon indicates that you are setting target Solar leaving temperature.
	Function setting	This icon indicates that you are setting engineer parameter.
	Temperature view	This icon indicates that you are viewing the some temperature value.
	Trouble	This icon indicates that trouble is occurred.
	Defrosting	This icon indicates that the defrost mode is active.

	24 hours timer	This icon indicates that you are setting 24 hours timer or 24 hours timer is active.
	24 hours decrease timer	This icon indicates that you are setting 24 hours decrease timer or 24 hours decrease timer is active.
	weekly timer	This icon indicates and flashing that you are setting weekly timer or weekly timer is active.
	Holiday reservation	This icon indicates and flashing that you are clearing some day in weekly timer.
	Water pump	This icon indicates that the indoor water pump is active.
	Outdoor unit	This icon indicates that the outdoor unit is active.
	The first stage internal electric heater	This icon indicates that the first stage internal electric heater which is located inside the indoor unit is operating.
	The second stage internal electric heater	This icon indicates that the second stage internal electric heater which is located inside the indoor unit is operating.
	Sanitary water tank heater	This icon indicates that the electric heater located inside sanitary water tank is operating.
	Thermostat	This icon indicates connection with thermostat
	Central controller	This icon indicates that the unit is controlled by the central controller, and all the buttons will not effect
	Auxiliary solar thermal pump	This icon indicates that auxiliary solar thermal pump is active

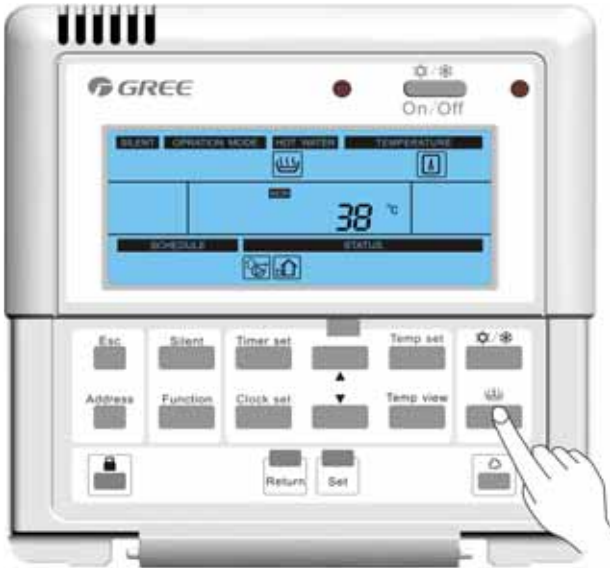
3.2.3 Operation Instruction

3.2.3.1 Operation and Stop of the Unit

Without thermostat, press On/Off button, Heat or Cool mode will operate. Heat mode icon or Cool mode icon will display. Press On/Off button again to exit Heat or Cool mode.



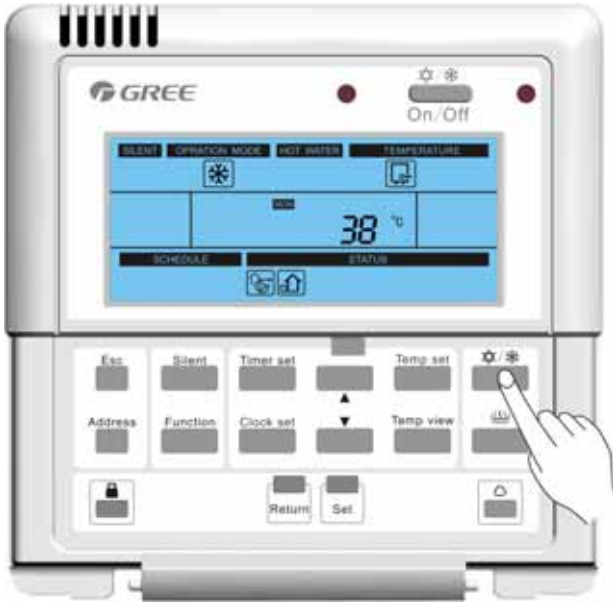
If there is water tank, press button and the sanitary heating mode will act. The sanitary heating mode icon will show. Press button again to exit sanitary heating mode.



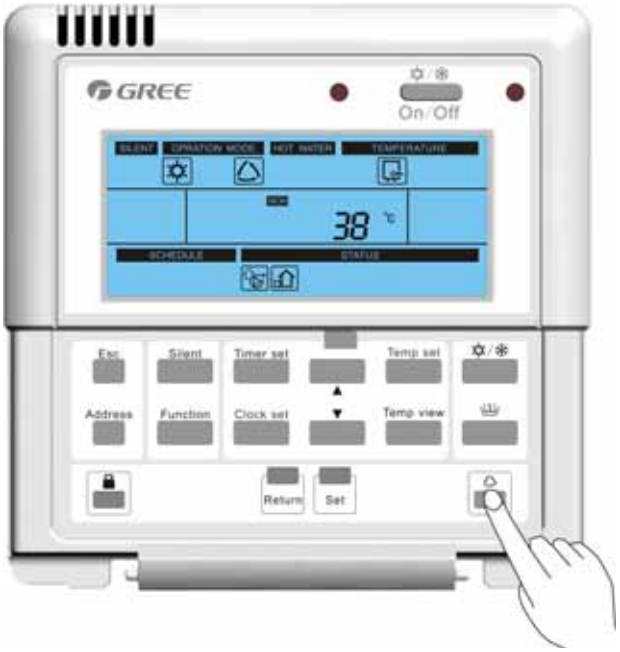
3.2.3.2 Mode Switch

1) Press button to turn on the Air-conditioning mode.

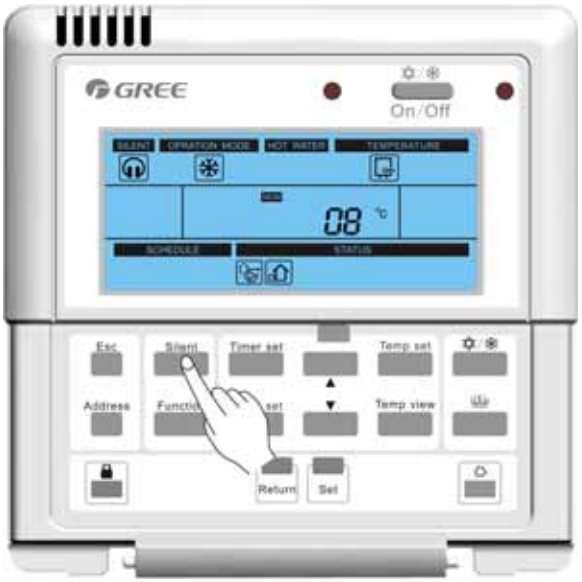
2) Press repeatedly button to select Heat mode or Cool mode



3) If the air function is on and the mode is heating mode, press button, and the weather depending mode will act. The weather depending mode icon will show. Press button again. The weather depending mode will stop.



4) If the unit is turned on (with air function or sanitary water function), press Silent button and the silent mode will operate. The silent mode icon will show. Press Silent button again, and the silent mode will stop.



5) If there is error and the compressor have stopped for over 3 minutes, press button or button for 5 seconds to enter urgent sanitary heating mode or urgent heating model. The icon or will flash. Press button or button for 5 seconds again to exit urgent sanitary heating mode or urgent heating mode.

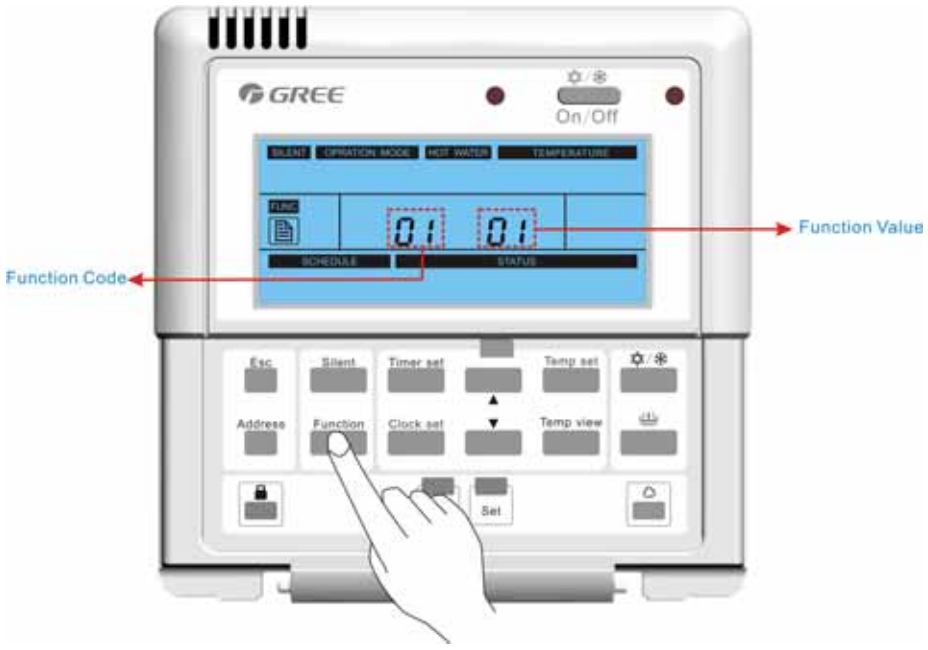
Note:

a. With malfunction of internal electric heater, malfunction of water switch or malfunction of backup outlet temperature sensor, the urgent heating mode is not available.

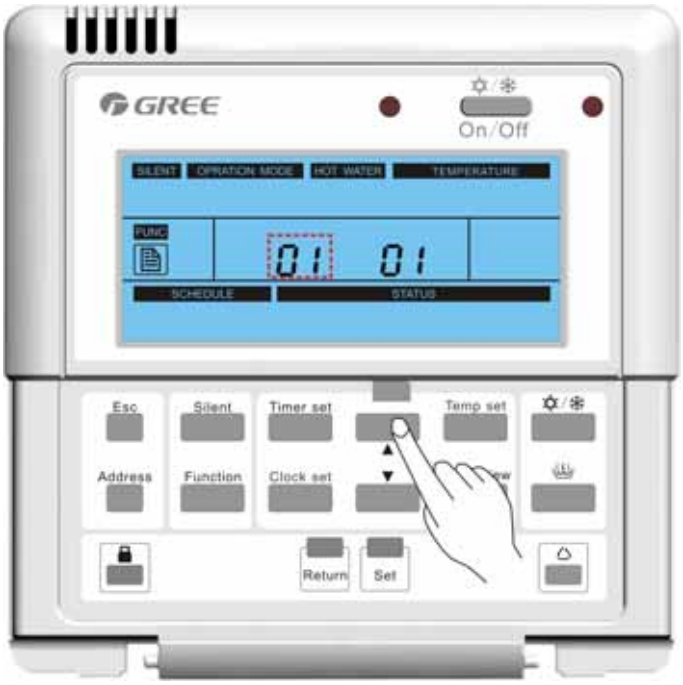
b. With malfunction of sanitary water tank electric heater, malfunction of the first sanitary water tank temperature sensor, the urgent sanitary heating model is not available.

3.2.3.3 Parameter Setting

1) Press Function button to enter user function setting menu. Icon will show.

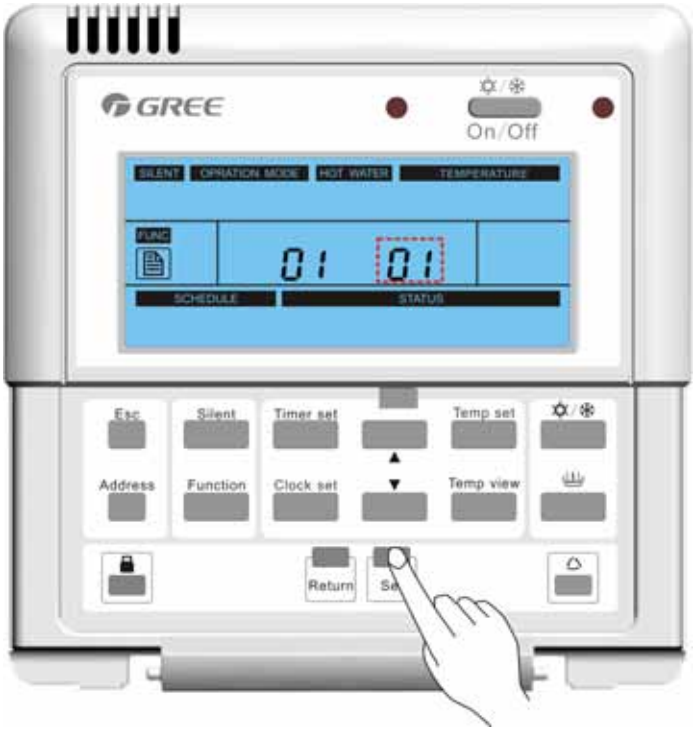


2) Press button to select the function code that you want to set.



3) Press

button to enter function parameter setting mode. The function parameter is flashing.



4) Press button to adjust parameters.

5) Press

button to save the desired parameter.

6) Repeat step 2 to 5 to set other function parameters. Press Esc button or Return button to return the main menu.

Table of user function parameter

Code	Function description	Detail	Range
1	Setting temperature selection: Selection for setting temperature as room temperature or outflow water temperature	0: leaving water temperature 1: room temperature	0~1(default: 0)
2	Forced Operation	0: no Forced operation 1: Forced cooling operation 2: Forced heating operation	0~2(default: 0)
3	Celsius/Fahrenheit switching: Display temperature in Celsius or Fahrenheit	0:Celsius 1:Fahrenheit	0~1(default: 0)
4	Thermostat control isEnable/disable	0: disable 1: enable	0~1(default: 0)
5	Enable/disable of quick sanitary heating	0: disable 1: enable	0~1(default: 0)
6	Enable/disable of disinfection operation	0: disable 1: enable	0~1(default: 0)
7	Enable/disable of holiday mode	0: disable 1: enable	0~1(default: 0)
8	Setting priority when under cooling demand and sanitary water heating demand are required at the same time	0: priority to cooling 1: priority to water tank heating	0~1(default: 0)
9	Setting priority when under heating demand and sanitary water heating demand are required at the same time	0: priority to heating 1: priority to water tank heating	0~1(default: 0)
10	Setting status of back-up heater(indoor unit)	1: use half capacity of Back-up heater(3kW) 2: use full capacity of Back-up heater(6kW)	1~2(default:1)

11	Setting start date of disinfection operation	0: Sunday 1: Monday 2: Tuesday 3: Wednesday, 4: Thursday 5: Friday 6: Saturday	0~6(default: 6)
12	Setting start time in 24 hours of disinfection operation	00-00:00 01-01:00 … 23-23:00	0~23(default:23)
13	Enable/disable of Metal Base (pedestal) heater	0: disable 1: enable	0~1(default:1)
14	Tank sensor quantity	1: one 2: two	1~2(default:2)
15	Tank equipment	0: NOT Equipped 1: Equipped	0~1(default: 0)
16	Other thermal equipment	0: NOT Equipped 1: Equipped	0~1(default: 0)
17	FCU equipment	0: NOT Equipped 1: Equipped	0~1(default: 0)
18	Remote air temperature sensor	0: NOT Equipped 1: Equipped	0~1(default: 0)
19	Heating operation level	0: high temperature cycle 1: low temperature cycle	0~1(default:1)
20	Setting turn on temperature of back-up heater(indoor unit)	/	-20~18℃(default: 0℃)
21	Setting maximum water tank temperature heated by heat pump cycle	/	40~50℃(default: 50℃)
22	Setting heating temperature of disinfection operation	/	40~70℃(default: 70℃)
23	Setting lower temperature for Weather-dependent operation	/	-20~5℃(default: -15℃)
24	Setting upper temperature for Weather-dependent operation	/	10~20℃(default: 15℃)
25	Setting temperature gap from target temperature of cooling operation	/	2~10℃(default: 5℃)
26	Setting temperature gap from target temperature of heating operation	/	2~10℃(default: 5℃)
27	Setting temperature gap from target temperature of sanitary heating operation	/	2~8℃(default: 3℃)

3.2.3.4 Function Set-up Description

Function code 1: Setting temperature selection

The unit can operate according to air temperature or outflow water temperature. The air temperature or outflow water temperature can be selected as setting temperature.

Note: Air temperature as setting temperature is ONLY available when Remote Air Sensor Connection is enabled and Function Code 18 is set as 01.

Function code 2:Forced operation

Forced Operation includes forced cooling and forced heating operation:

Forced cooling operation should be performed when additional refrigerant charge is required.

To charge the refrigerant, the unit must run in Cool mode.

Forced cooling should be performed upon the first run(test run)and when out-door temperature is lower than

10℃;

Forced heating should be performed upon the first run(test run)and when out-door temperature is higher than 35℃;

Forced Operation instantly makes the unit working in Cool/Heat mode for 15 minutes.

Note:

a. Before setting the forced operation,please turn off the unit;

b. When the forced cooling/Heating operation is set,press ON/OFF button in the control panel. The unit will start running.

c. Press ON/OFF button in the control panel. forced operation mode will be finished.

d. After running 15 minutes under Forced Operation, the system will automatically stop operating.

Function code 3: Celsius/Fahrenheit switching

Temperature is displayed in Celsius or Fahrenheit.

Function code 4: Thermostat control

Code 4 is set as 1. The unit operation is controlled by the Thermostat;

Note: Thermostat control only for space cooling and space heating;

Function code 5: Quick sanitary heating

If code 5 is set as 1 and sanitary heating is ON, both the heat pump and electric heater in water tank should be turned on;

With code 5 set as 0 and sanitary heating ON, if the water tank temperature is below maximum water tank temperature, only the heat pump will operate. If the water tank temperature is higher than maximum water tank temperature, the heat pump will stop operating and electric heater in water tank will run.

Function code 6: Disinfection operation

Disinfection operation is special sanitary tank operation mode to kill and to prevent growth of viruses inside the tank.

Function code 7: Holiday mode

If code 7 is set as 1, the system will automatically turn to space heating and other mode will automatically be turned OFF. But at the same time if the unit running in emergency mode.

The system will not turn to holiday mode.

In the holiday mode, the outflow water temperature or remote room air temperature can not be set. In holiday mode, the icon will flash.

Function code 8: Setting priority when cooling demand and sanitary heating demand are required at the same time

If code 8 is set as 0,that means priority is cooling operation. The heat pump will always run in space cooling(include floor cooling)mode. In this case sanitary water is only heated by electric heater. On the other hand, If code 8 is set as 1, that means priority is sanitary heating. The sanitary water is heated by heat pump and electric heater. In that case, space cooling can not act when sanitary water is heated. When sanitary water heating is stopped, the heat pump will turn to space cooling.

Function code 9: Setting priority when heating demand and sanitary heating demand are required at the same time

If code 9 is set as 0, that means priority is heating operation. The heat pump will always run in space heating (include floor heating) mode. In that case, sanitary water is only heated by electric heater. On the other hand, if code 9 is set as 1, that means priority is sanitary heating. Sanitary water is heated by heat pump and electric heater. Space heating can not act when sanitary water is heated. When sanitary water heating is stopped, the heat pump will turn to space heating.

Function code 10: Setting status of back-up heater(indoor unit)

If code 10 is set as 1, half capacity of back-up heater in the indoor unit can be turned into use when the out-door temperature is below the set value in code 20.

If code 10 is set as 2, full capacity of back-up heater in the indoor unit can be turned into use when the out-door temperature is below the set value in code 20.

Function code 11: Setting start date of disinfection operation

Value of function code 11 determines the date when disinfection mode is running. ’0’ stands for Sunday, ’1’ for Monday … and ’6’ for Saturday.

Function code 12: Setting start time in 24 hours of disinfection operation

Value of function code 12 determines the time when the disinfection mode is running. ’00’ stands for 0:00am, ’01’ for 01:00am… ’22’ for 22:00 and ’23’ for 23:00pm.

Function code 13: Metal Base (pedestal) heater

If code 13 is set as 0, the Metal Base(pedestal) heater will never be turned on;

If code 13 is set as 1, when the compressor started and the out-door temperature is below 0℃, the Metal Base(pedestal) heater will be turned on; when the compressor stopped or the out-door temperature is higher than 2℃, the Metal Base(pedestal)heater will be turned off.

Function code 14: Quantity of tank sensor

If code 14 is set as 1, there is only one temperature sensor on the sanitary water tank;

If code 14 is set as 2, there are two temperature sensors on the sanitary water tank;the one in the middle of the tank is for display(in the control panel), and the other one is for control (control ON/OFF of the heat pump or electric heater).

Function code 15: Tank equipment

If code 15 is set as 0, there is no sanitary water tank installed in the system. The sanitary water heating and disinfection operation are in valid in the control Panel.

If code 15 is set as 1, sanitary water tank is installed in the system. The sanitary water heating and disinfection operation are available in the control panel.

Function code 16: Other thermal equipment

If code 16 is set as 0, there is no other thermal equipment connected to the tank.

If code 16 is set as 1, other thermal equipment(such as gas boiler, oil boiler or solar system) is connected to the tank(this tank must be two coil, one for heat pump and the other for other thermal equipment).

Function code 17: FCU equipment

If code 17 is set as 0, there is no FCU (FAN COIL UNIT) equipped in the water system. In order to preventing condensation on the floor during cooling operation, the setting value of the outflow water temperature can not be below 16℃. If code 17 is set as 1, there is FCU (FAN COIL UNIT) equipped in the water system. In this case, 2-way value should be installed and connected to the indoor PCB. Otherwise, the unit will operate abnormally.

Function code 18: Remote air temperature sensor

If code 18 is set as 0, the remote air temperature sensor is not equipped. The unit can only be operated according outflow water temperature. The value of code 1 is can not be set as 1, otherwise the unit can not operate.

If code 18 is set as 1, the remote air temperature sensor is equipped. The unit can operate according the set value of the code 1.

Function code 19: Heating operation level

If code 19 is set as 0, in space heating, the unit will be operated by high temperature cycle. The setting value of outflow water temperature ranges from 25℃ to 55℃. The high temperature cycle suitable for FCU or radiator is equipped in the water loop.

If code 19 is set as 1, in space heating, the unit will be operated by low temperature cycle. The setting value of outflow water temperature ranges from 25℃ to 45℃, low temperature cycle suitable for under-floor coil is equipped in the water loop.

Function code 20: Setting startup temperature of back-up heater(indoor unit)

Set the outdoor air temperature when half capacity of electric heater starts operating.

Example : If Value is set as '-1':

Half capacity of electric heater will start operating when outdoor air temperature is below -1℃… and current outflow water temperature or room air temperature is much lower than target outflow water temperature or target room air temperature.

Function code 21: Setting maximum water tank temperature heated by heat pump cycle

Set the maximum temperature generated by AWHP compressor cycle.

Example : If Value is set as '50':

If the target water tank temperature is 60℃, and when the current water tank temperature is below 50℃, the water tank is heated by heat pump. When current water tank temperature is higher than 50℃ but lower than target water tank temperature (in this case is 60℃), the water tank is heated by water heater in tank

Function code 22: Setting heating temperature of disinfection operation

Set the target temperature of disinfection operation.

Disinfection operation is special sanitary tank operation mode to kill and to prevent growth of viruses inside the tank.

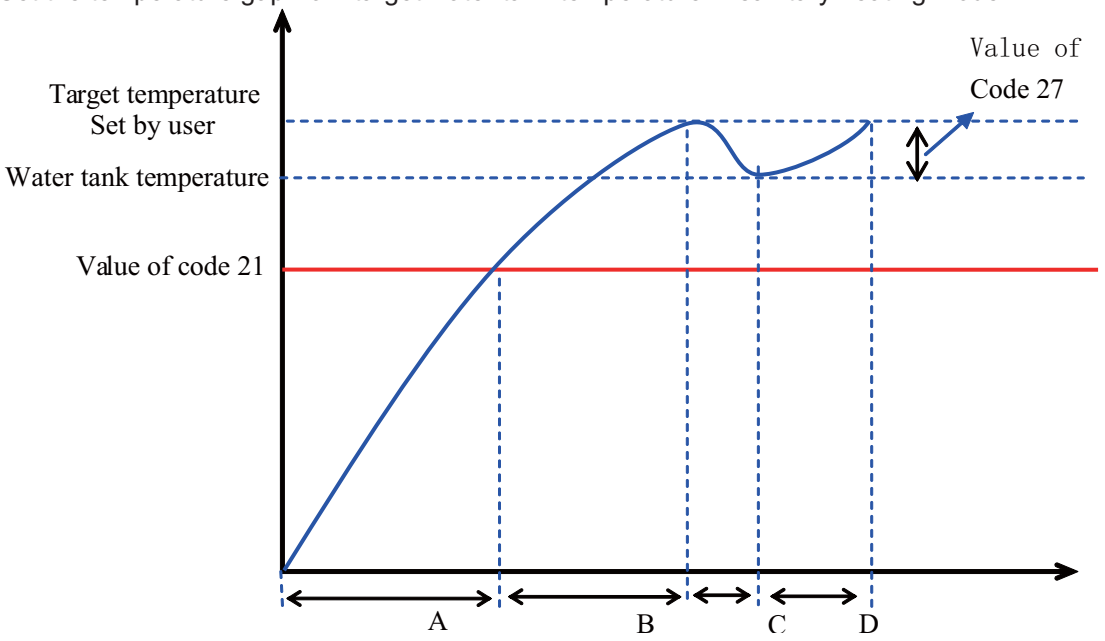
Before set this function, the value of code 6 should be set as 1.

Function code 23, 24: Setting the range of weather-dependent operation

Weather-dependent operation is that the unit automatically adjusts target temperature (outflow water or room air) according to the outdoor air temperature.

Value of code 23: Lower limit of the outdoor air temperature;

Value of code 24: Upper limit of the outdoor air temperature;
Function code 25: Setting temperature gap from target temperature of cooling operation
Set the temperature gap from target temperature (outflow water or room air) in cooling mode;
This value requires frequent On and Off of the unit.
Function code 26: Setting temperature gap from target temperature of heating operation
Setting the temperature gap from target temperature (outflow water or room air) in heating mode;
This value requires frequent On and Off of the unit;
Function code 27: Setting temperature gap from target temperature of sanitary heating operation
Set the temperature gap from target water tank temperature in sanitary heating mode.



A: heating by heat pump C: no heating
B: heating by water heater in tank D: heating by water heater in tank

Sanitary water heating

3.2.3.5 Set engineer function parameter

1) Press Function and Set buttons at the same time and hold on 5 seconds to enter engineer function setting mode. Icon will display.

2) Press button to select the function code that you want to set.

3) Press Set button to enter function parameter setting mode. The function parameter is flashing.

4) Press button to adjust desired parameter.

5) Press Set button to save the desired parameter.

6) Repeat step 2 to 5 to set other function parameter, or press Esc button or Return button to return to the main menu.

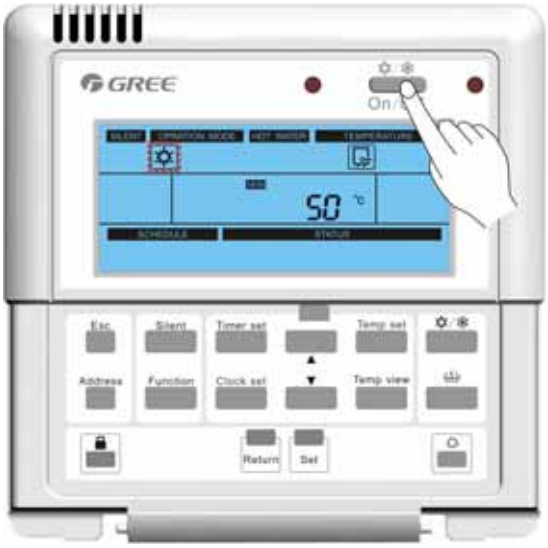
The table of user function parameter

Code	Function description	Detail	Range
1	Setting interval of defrost mode	/	30~60minute(default:50)
2	Setting duration of defrost mode	/	1~15minute(default:10)
3	Setting enter temperature of preventing freezing operation	/	1~5℃(default:3℃)
4	Setting exit temperature of preventing freezing operation	/	6~14℃(default:12℃)
5	Setting enter temperature of anti-high temperature operation	/	55~60℃(default:58℃)
6	Setting exit temperature of anti-high temperature operation	/	40~54℃(default:53℃)
7	Setting enter temperature of defrost operation	/	-10~0℃(default:-4℃)
8	Setting exit temperature of defrost operation	/	5~30℃(default:15℃)

3.2.3.6. Set target temperature

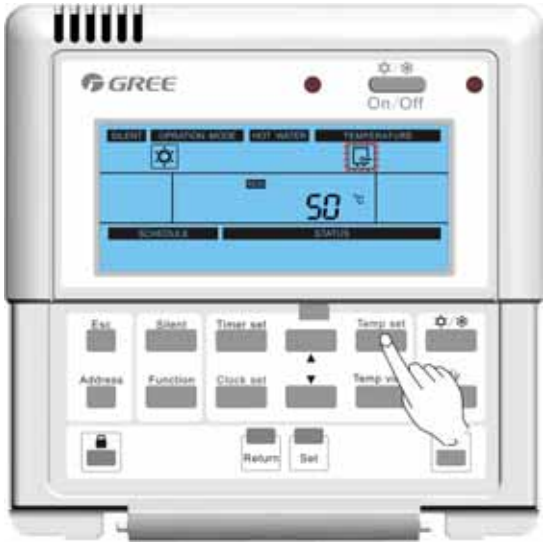
1) Press

button or button to turn on the unit.



2) Press repeatedly

button to select one target temperature: room temperature, outflow water temperature, sanitary water tank temperature, and solar outflow water temperature. The setting temperature is blinking.



Note:

a. In heating or cooling mode, it can select room temperature or leaving water temperature.

b. In sanitary heating mode, it can select sanitary water tank temperature and solar leaving water temperature (solar kit is installed).

c. Room temperature setting is available when you have selected room temperature as control target.

d. Please refer function code 01.

e. In heating mode, if weather depending mode is activated, you can't set the room temperature or outflow water temperature.

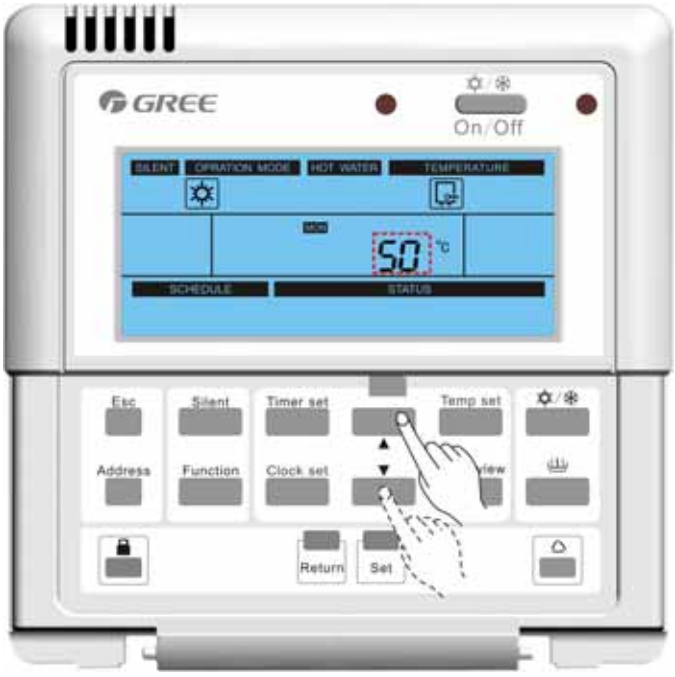
f. In heating mode , there are two Heating operation level:

1) high temperature cycle

2) low temperature cycle

g. Please refer to In function code 19.

3) Adjust desired temperature by pressing △ ▽ button.



Note:

a. △: Increase 1°C or 1°F for each press.

b. ▽: Decrease 1°C or 1°F for each press.

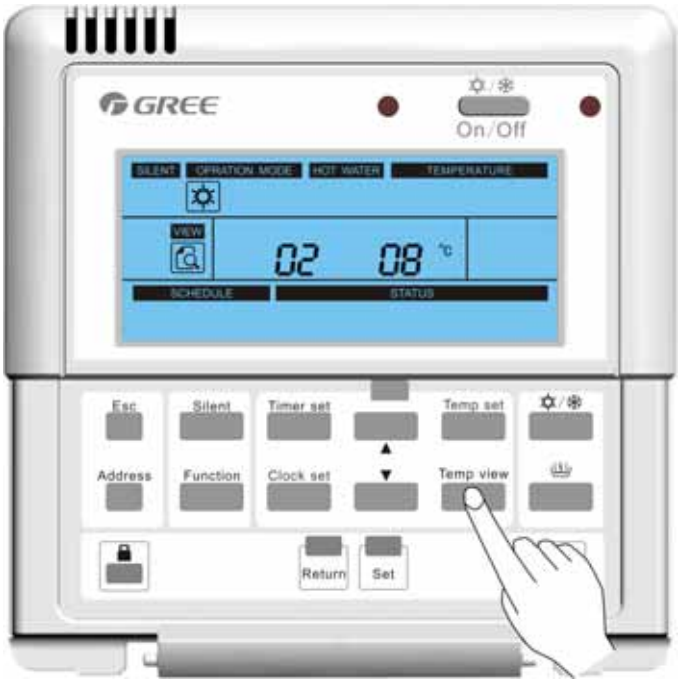
4) Press Set button to save the setting target temperature and return to the main menu.

The range of the setting temperature (unit:℃)

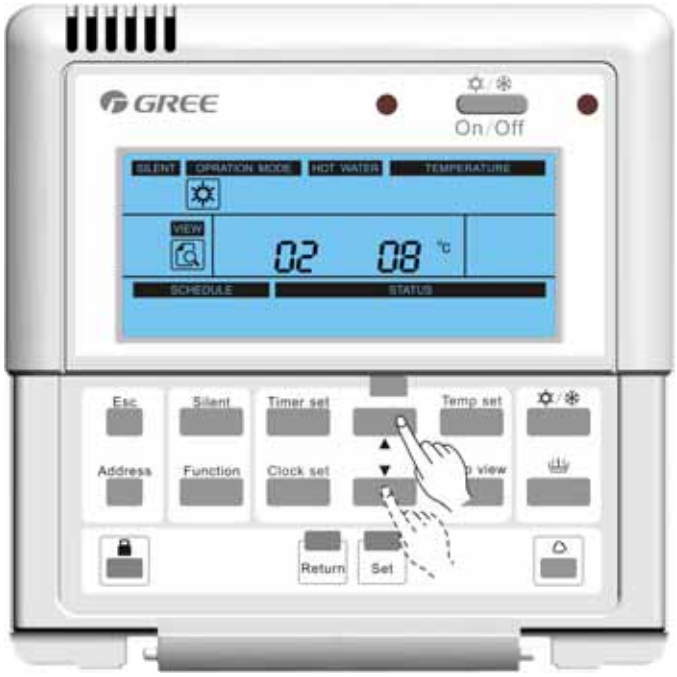
Temperature	Mode		Temperature range
Outflow water temperature(NO FCU)	cool		18~25(default:18)
Outflow water temperature(FCU)	cool		7~25(default:7)
Outflow water temperature	Heat	high temperature cycle	25~55(default:40)
		low temperature cycle	25-45(default:40)
Room temperature	cool		18~30(default:20)
Room temperature	heat		18~30(default:26)
Sanitary water tank temperature	/		40~80(default:50)

3.2.3.7. View temperature

1) Press Temp view button to enter viewing temperature interface. Icon will show.



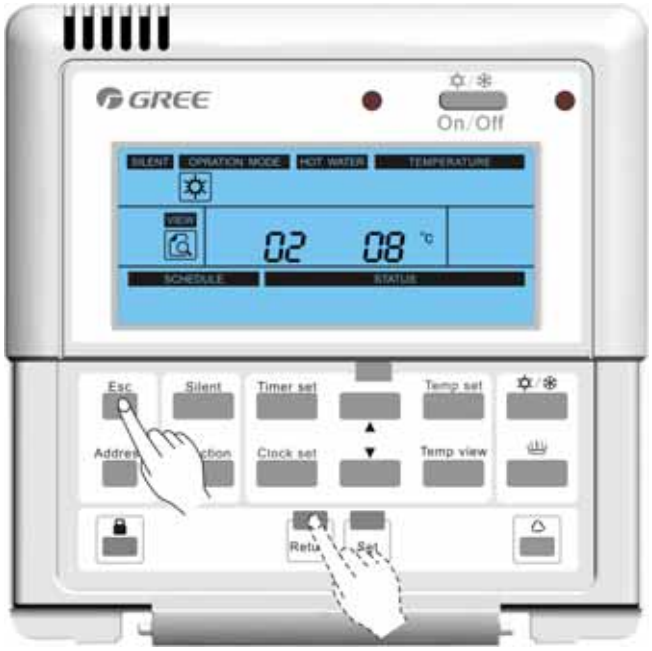
2) Press button to select one temperature code.



The table of view temperature

Temperature code	Function description
1	Outer ambient temperature
2	Suction temperature
3	Discharge temperature
4	Defrost temperature
5	The temperature of liquid pipe inside refrigerant
6	Inlet temperature
7	Outlet temperature
8	Internal electric heater outlet temperature
9	Sanitary water tank temperature 2
10	Sanitary water tank temperature 1
11	Room temperature
12	The temperature of gas pipe inside refrigerant
13	Other thermal outlet temperature

3) Press Esc button or Return button to return to the main menu. The system will automatically release without any input after 20 seconds.

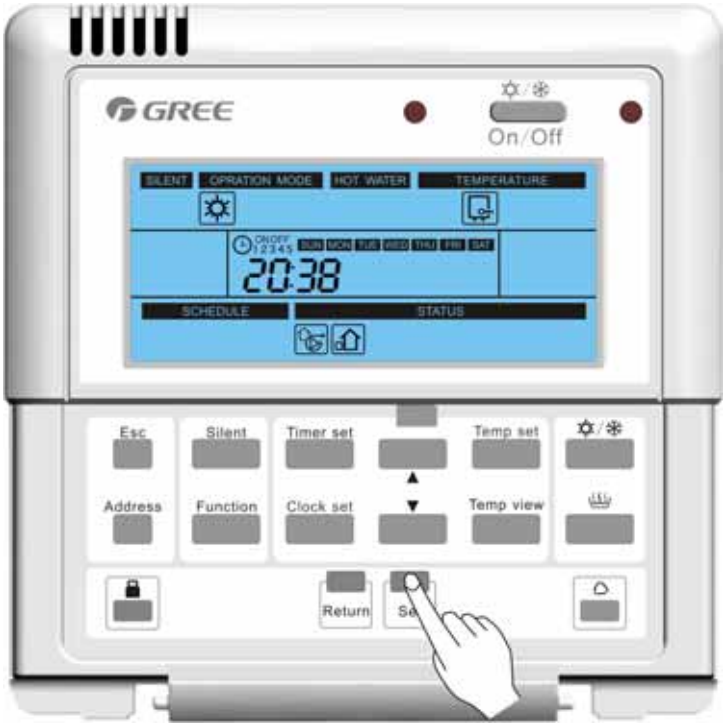


3.2.3.8. timing setting

1) Press Clock set button to enter setting current time mode. The current setting hour is blinking.

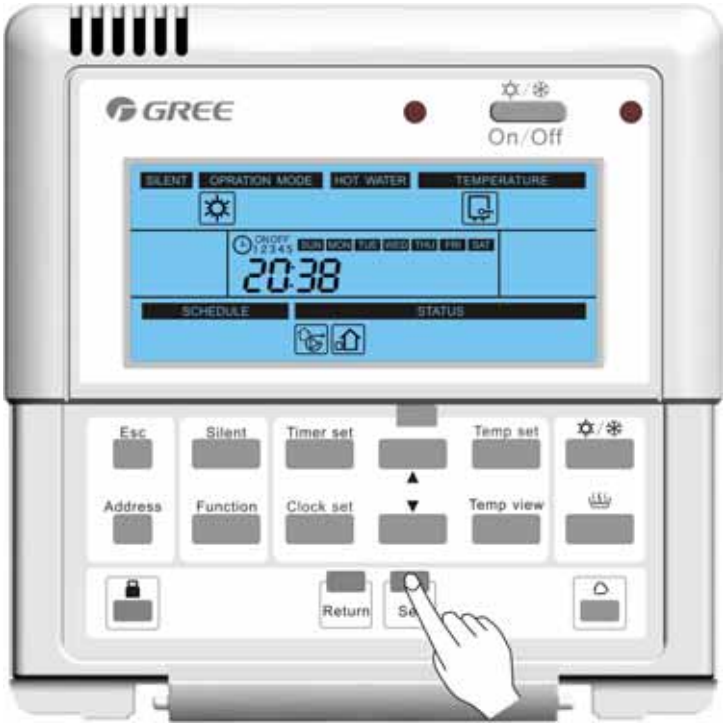
2) Press button to adjust desired hour.

3) Press Set button to save the setting hour and the system will automatically enter setting current minute mode. The current setting minute is blinking.



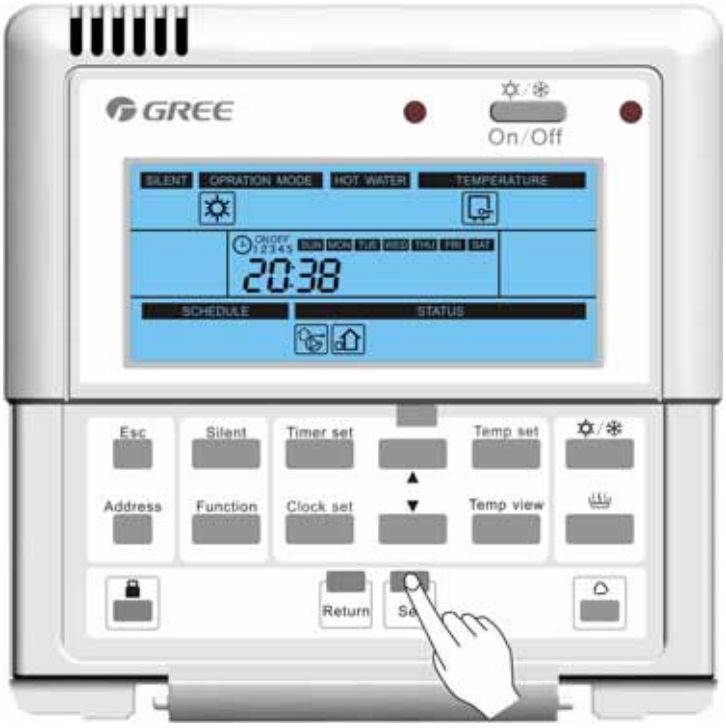
4) Press button to adjust desired minute.

5) Press Set button to save the setting minute and the system will automatically enter setting current day mode. The current setting day is blinking.



6) Press button to adjust desired day.

7) Press Set button to save the setting day and the system will automatically return to main menu. The current time has been set successfully.

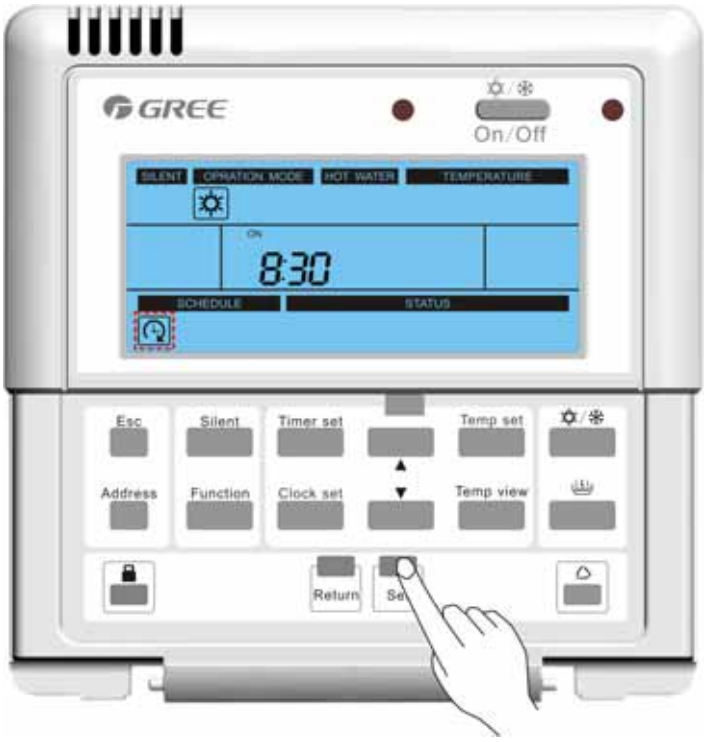


3.2.3.9. Set timer

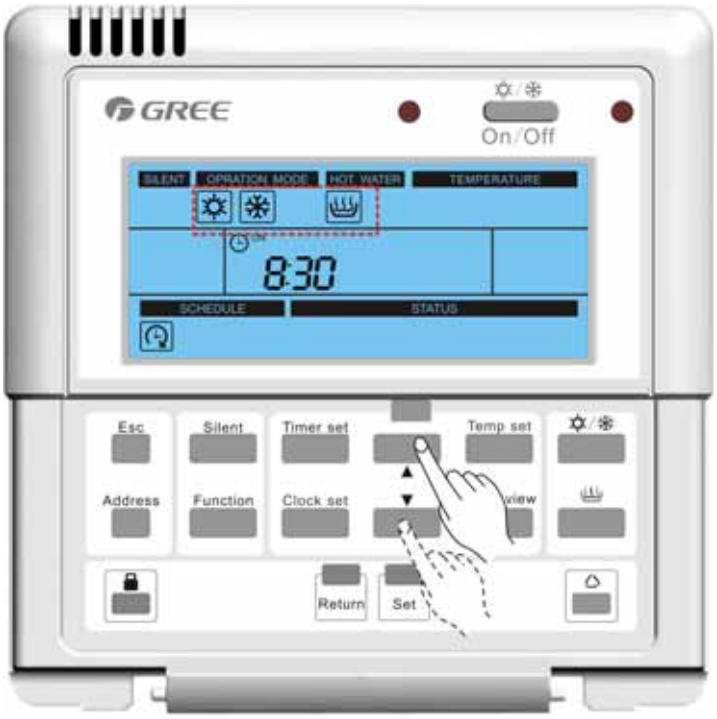
(1) Set 24 hour reservation or 24 hour decrease reservation

1) Press repeatedly Timer set button to select setting 24 hour reservation or 24 hour decrease reservation.

24 hour reservation icon or 24 hour decrease reservation icon will show. The default operation model icon of 24 hour reservation or 24 hour decrease reservation will flash.



2) Press △ ▽ button to select the operation mode of the 24 hour reservation or 24 hour decrease reservation (heating mode, cooling mode, sanitary heating mode, heating mode + sanitary heating mode, cooling mode + sanitary heating mode).



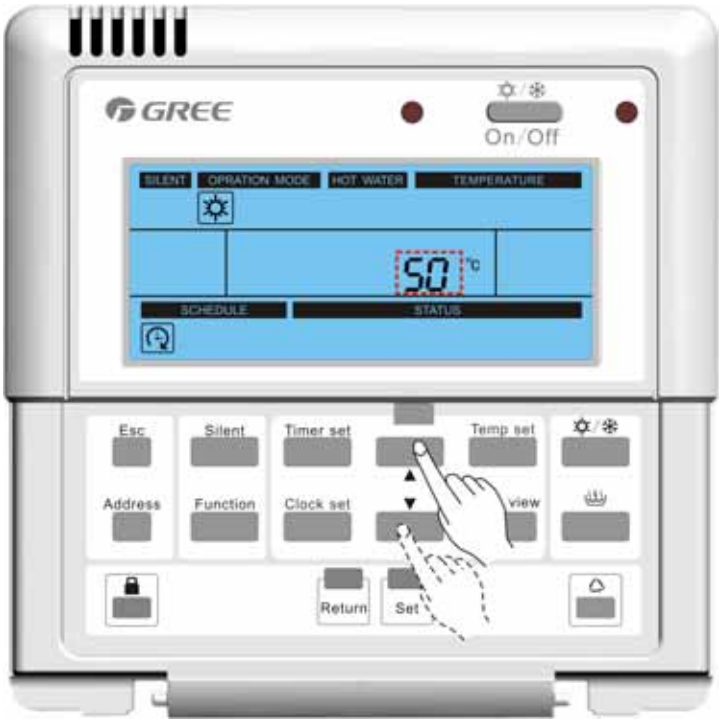
3) Press Set button to save the operation mode of the 24 hour reservation or 24 hour decrease reservation. The system will automatically enter selecting ON/OFF of the 24 hour reservation or 24 hour decrease reservation. ON/OFF is flashing.

Note: If 24 hour reservation or 24 hour decrease reservation is set, pressing Set button will cancel the current 24 hour reservation or 24 hour decrease reservation, and return to main menu.

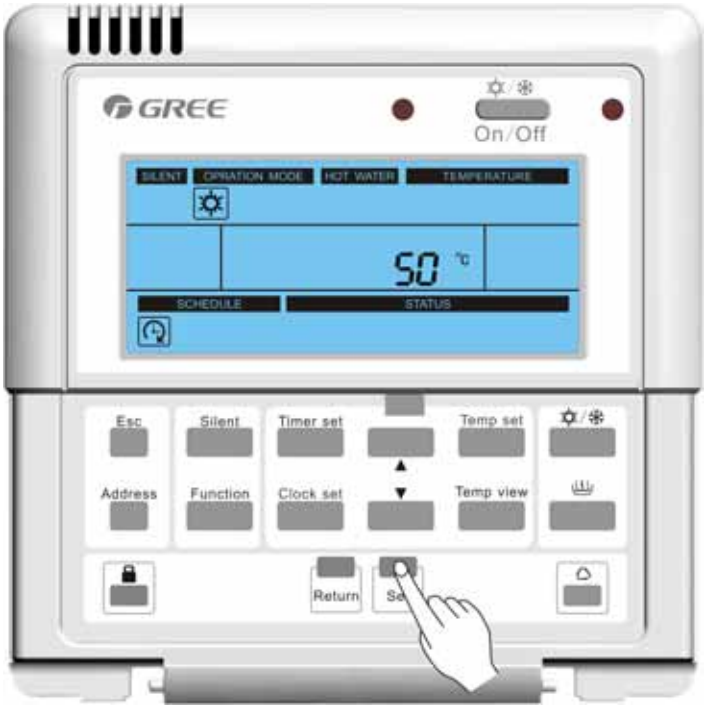
4) Press button to select ON/OFF of the 24 hour reservation or 24 hour decrease reservation (on mode ON, or off mode OFF).

5) Press Set button to save ON/OFF mode of the 24 hour reservation or 24 hour decrease reservation and the system will automatically enter next step. If ON mode is selected, it will enter step 6, or step 8. The value that you want to set is flashing.

6) Press △ ▽ button to adjust target temperature of the 24 hour reservation or 24 hour decrease reservation.



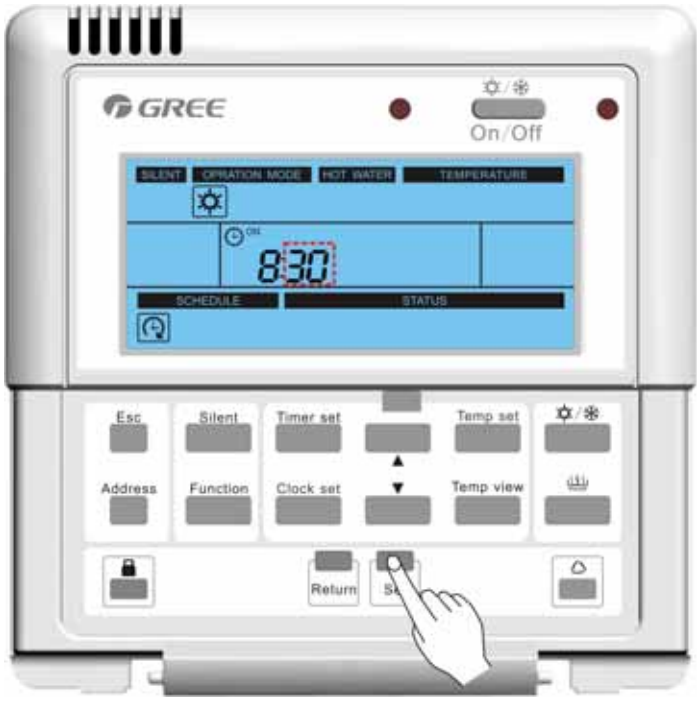
7) Press Set button to save the target temperature of the 24 hour reservation or 24 hour decrease reservation and system will automatically enter the interface of adjusting hour of the 24 hour reservation or 24 hour decrease reservation.



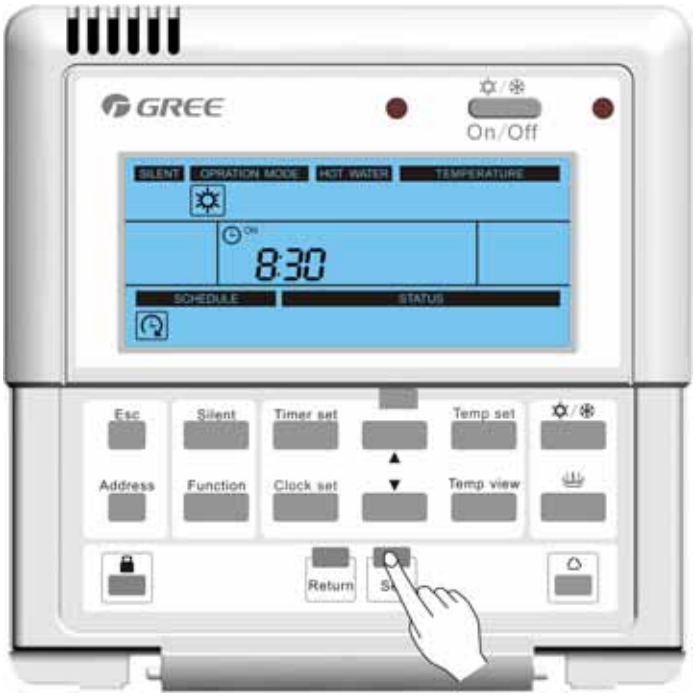
8) Press △ ▽ button to adjust hour of the 24 hour reservation or 24 hour decrease reservation.

9) Press

button to save the hour of the 24 hour reservation or 24 hour decrease reservation and the system will automatically enter the interface of adjusting minute of the 24 hour reservation or 24 hour decrease reservation.



10) Press
button to adjust minute of the 24 hour reservation or 24 hour decrease reservation.



11) Press

button to save the minute of the 24 hour reservation or 24 hour decrease reservation and the system will automatically return to main menu. 24 hour reservation or 24 hour decrease reservation has been set successfully. 24 hour reservation icon or 24 hour decrease reservation icon will flashing.

(2) Set weekly reservation

1) Press repeatedly Timer set button to select weekly reservation. The weekly reservation icon will display. The default operation model will flash.

2) Press △ ▽ button to select the operation mode of the weekly reservation (heating mode , cooling mode , sanitary heating mode , heating mode + sanitary heating mode , cooling mode + sanitary heating mode).

3) Press Set button to save the operation mode of the weekly reservation and the system will automatically enter setting target temperature mode of the weekly reservation. The value that you want to set is flashing.

4) Press △ ▽ button to adjust target temperature of the weekly reservation.

5) Press Set button to save the target temperature of the weekly reservation and the system will automatically enter selecting day of the weekly reservation. The day selected is flashing.

6) Press △ ▽ button to select one day of the weekly reservation.

7) Press Set button to save the day of the weekly reservation and the system will automatically enter the interface of adjusting hour of startup time in the first action of this day.

8) Press △ ▽ button to adjust hour of startup time in the first action of this day.

9) Press Set button to save the hour of startup time in the first action of this day. The system will automatically enter the interface of adjusting minute of startup time in the first action of this day.

10) Press △ ▽ button to adjust minute of startup time in the first action of this day.

11) Press Set button to save the minute of startup time in the first action of this day. The system will automatically enter adjusting hour mode of stop time in the first action of this day.

12) Press △ ▽ button to adjust hour of stop time in the first action of this day.

13) Press Set button to save the hour of stop time in the first action of this day and system will automatically enter adjusting minute mode of stop time in the first action of this day.

14) Press △ ▽ button to adjust minute of stop time in the first action of this day.

15) Press Set button to save the minute of stop time in the first action of this day. The system will automatically enter adjusting hour mode of startup time in the second action of this day.

16) Repeat steps 8 to 15 to program other actions of this day, or press Return button to return to step 7.

17) Repeat steps 6 to 15 to program other day of weekly reservation, or press Esc button to return to the main menu. The weekly reservation has been set successfully. The weekly reservation icon will display always.

(3) Holiday Reservation

1) If weekly reservation is activated, press repeatedly Timer set button to select holiday reservation. The holiday reservation icon will show.

2) Press Set button to enter the interface of selecting day of the holiday reservation. The day have been set in weekly reservation will show and it is flashing.

3) Press △ ▽ button to select one day that you want to clear.

4) Press Set button to clear the day in weekly reservation.

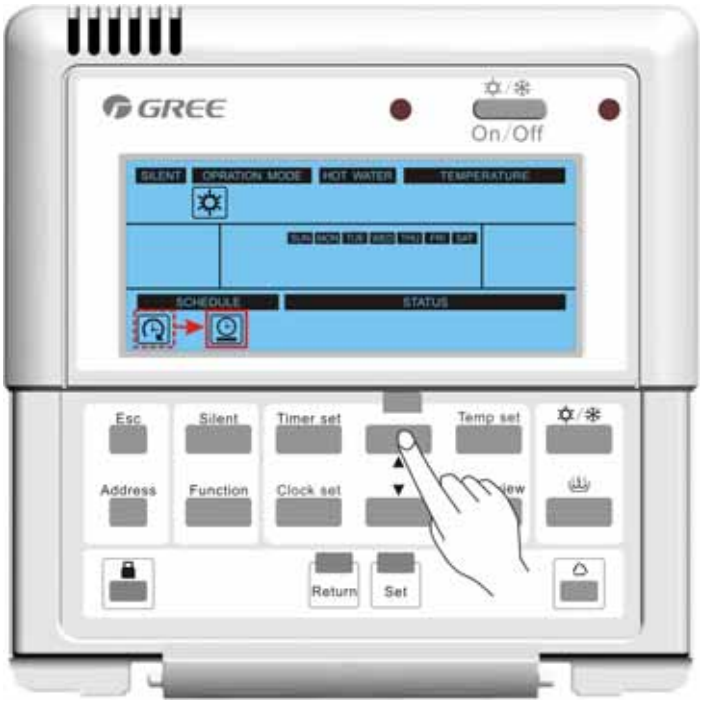
5) Repeat steps 3 to 4 to clear other day in weekly reservation (until no day is in weekly reservation, the system will automatically return to the main menu). Or press Esc button or Return button to return to the main menu.

(4) View timer---Timing

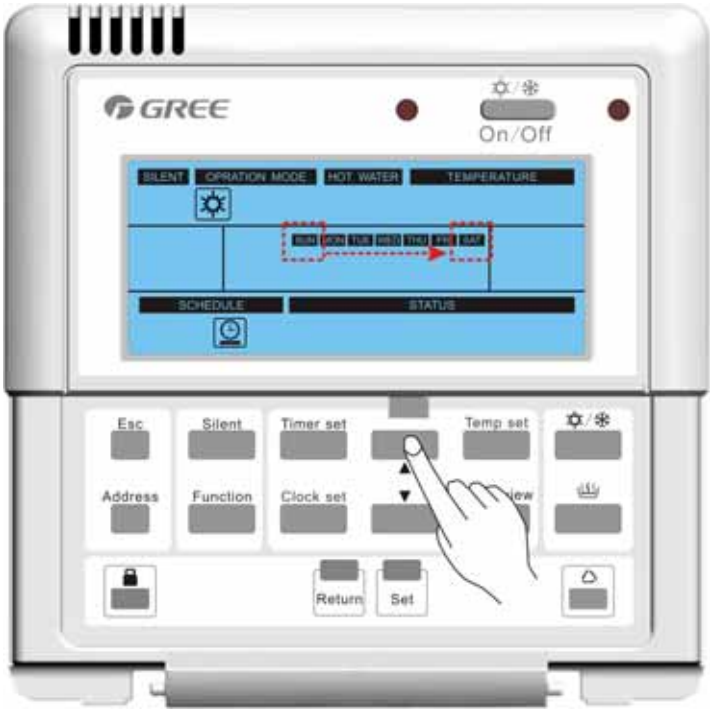
Press “Timer set” in the main menu for 5 seconds to enter “timing” menu. There won’t be any response if there is no timing.

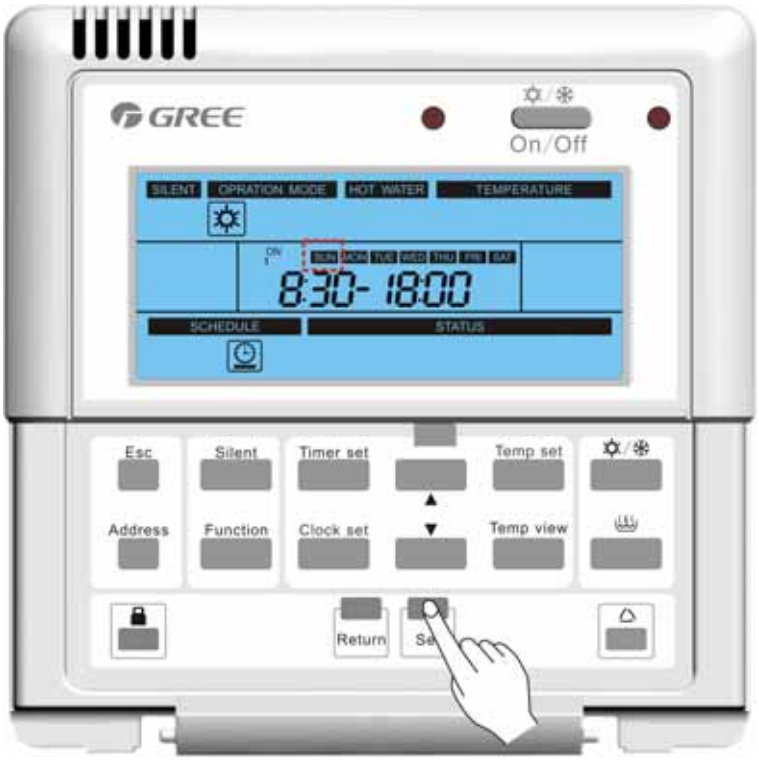
Hour timing (ON or OFF) indicates relevant icon; the numbers indicate at what time the unit will be turned on or off automatically. Press “Return” or “Esc” menu to exit current timing menu and come back to the main menu.

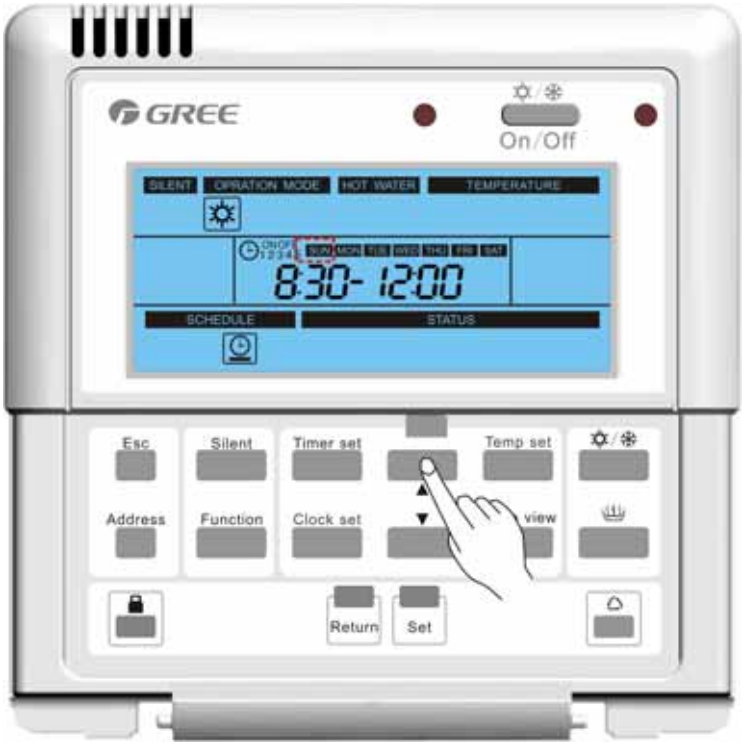
In timing menu, hour timing or count down setting is the priority (as a default function)..Press “▲”or “▼” bottom to shift to weekly timing menu.



Weekly timing indicates relevant icon. Press “▲” or “▼” button to check which weekday were set. The selected weekday flashes. Press “Set” to view the set time. Press “▲” or “▼” to view the next setting times.







Count down setting (ON or OFF) indicates relevant icon. The numbers indicate the time being set to turn on or turn off the unit automatically. Press “Return” or “Esc” menu to exit current timing menu and return to the main menu.

If there is no operation in 20 seconds, the system will exit current setting menu automatically.

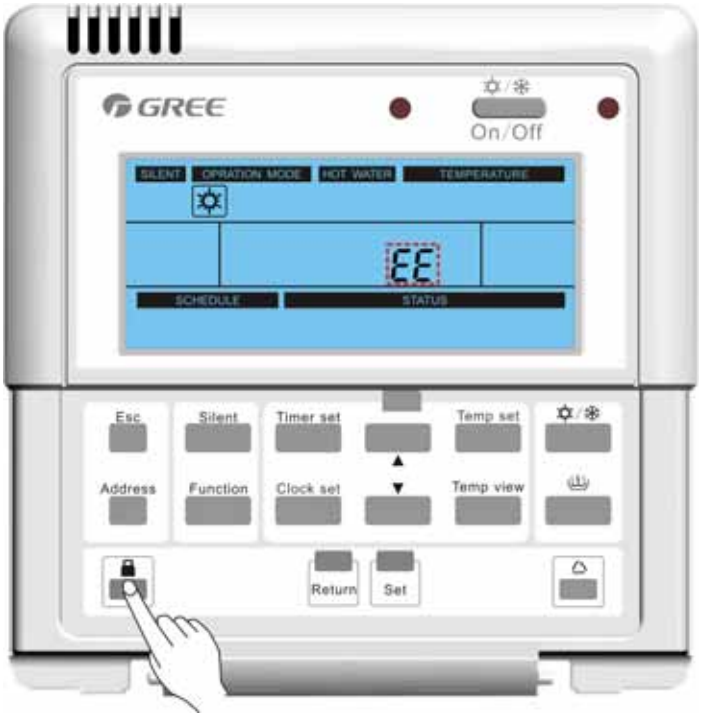
3.2.3.10 Child lock

This function is to prevent children or other people from using controller.

1) Press button for 5 seconds to enter this mode.

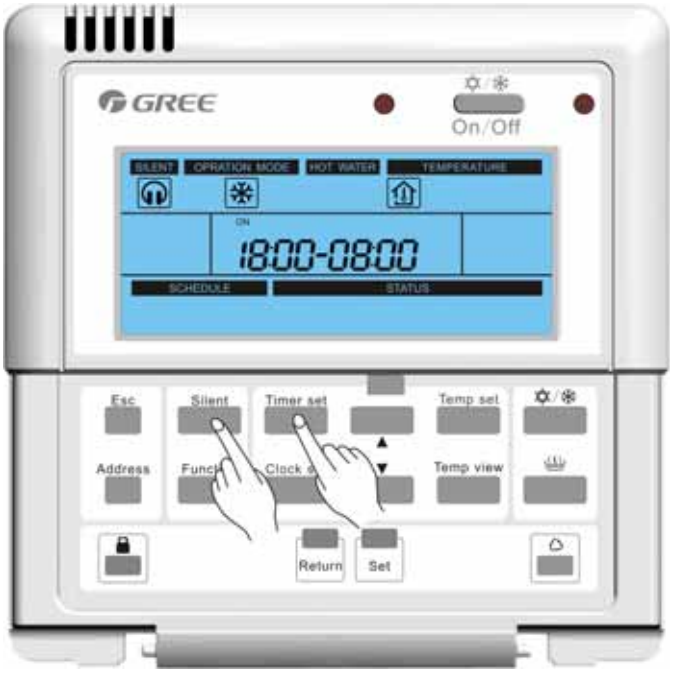
2) During child lock, 'EE' will display always, and nothing will happen whenever entering any kind of buttons except for button for 5 seconds.

3) Press button for 5 seconds again to exit this.



3.2.3.11 Timing Silent

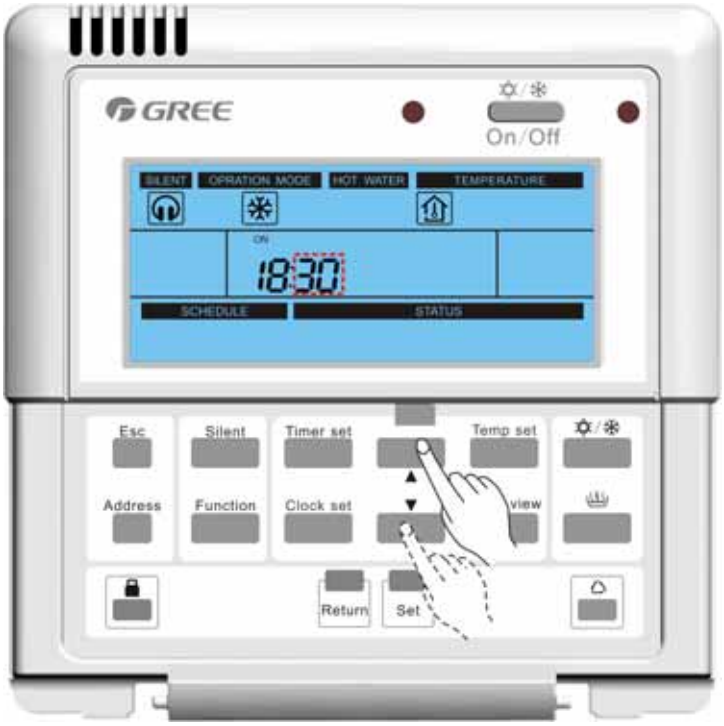
When the wired controller shows the main interface, press “Timer set” & “Silent” button for 5 seconds to enter timer silent interface. The silent icon, “ON” and the last set time of timer silent will display, while the starting hour of timer silent will blink (18:00~8:00 is defaulted upon initial energization).

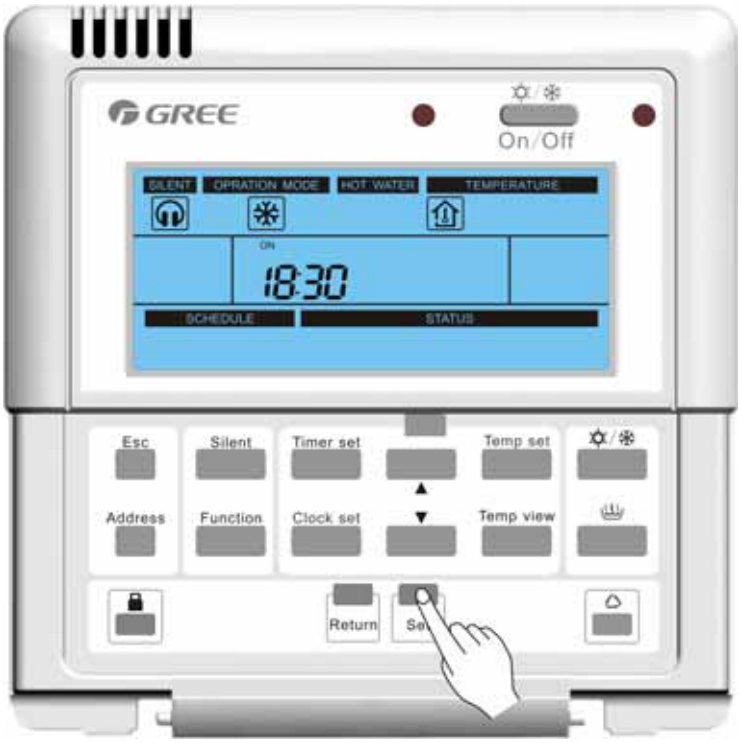


Steps for Setting Timer Silent

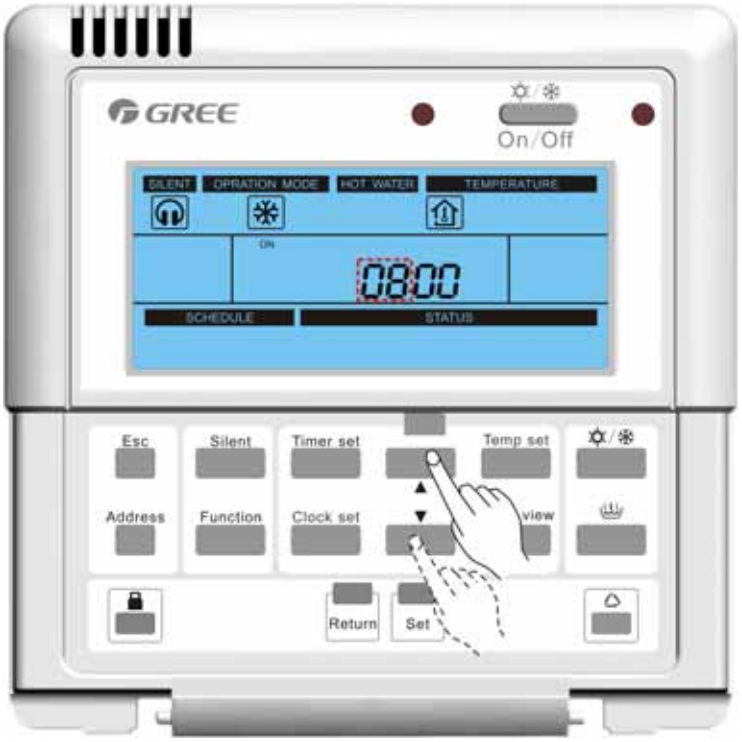
1) Press “▲” and “▼” button to adjust starting hour. Press “Set” button to save the adjustment and set starting minute.

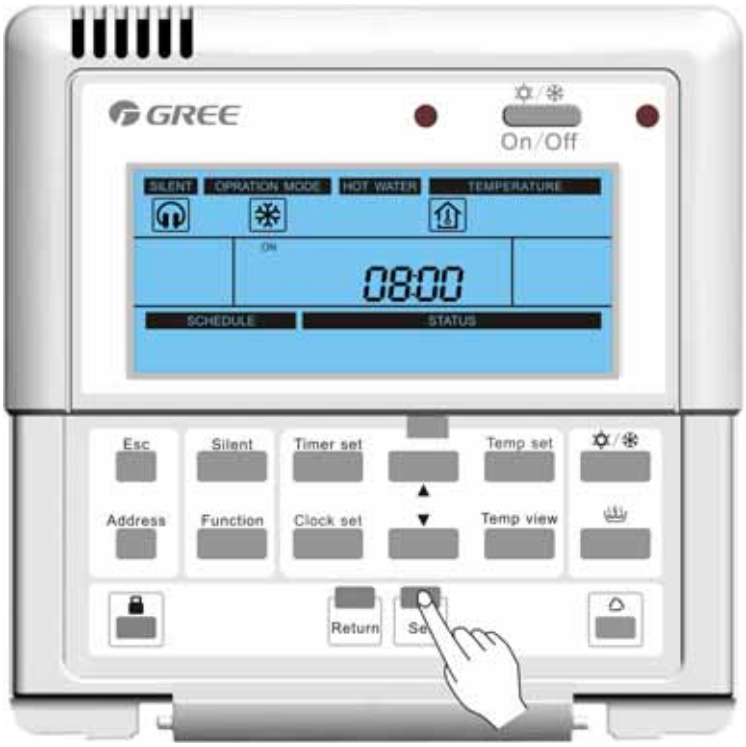
2) Press "▲" and "▼" button to adjust starting minute. Press "Set" button to save the adjustment and to set stopping hour, with "OFF" icon showing.



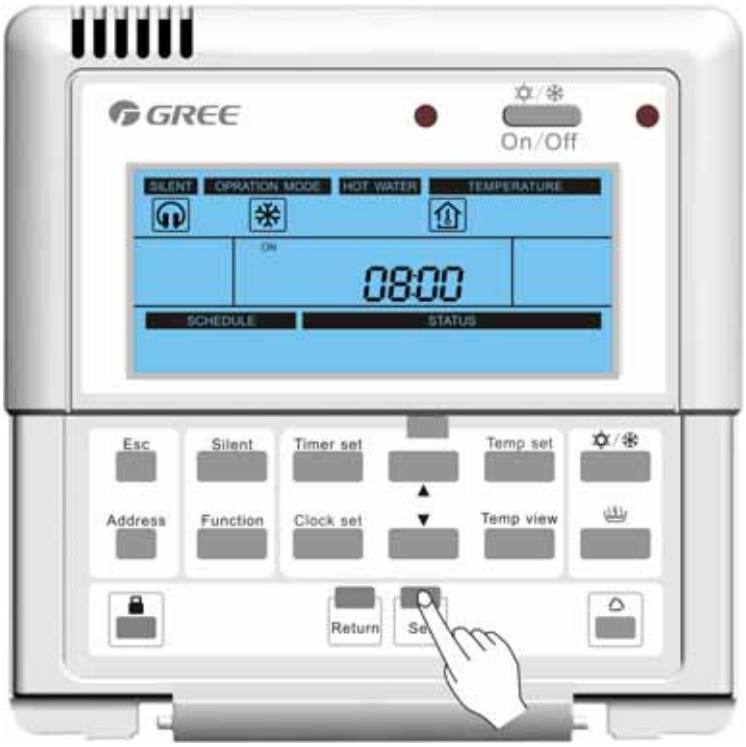


3) Press "▲" and "▼" button to adjust stopping hour. Press "Set" button to save the adjustment and set stopping minute.





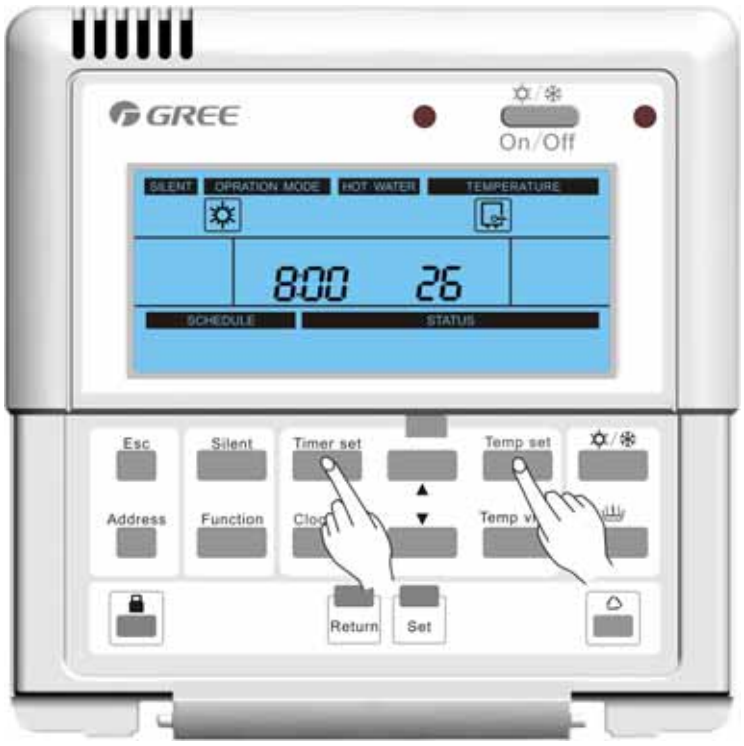
4) Press "▲" and "▼" button to adjust stopping minute. Press "Set" button to save the adjustment and return to main interface. Then the timing silent function is set successfully.



5) During operation, press “Return” or “Esc” button to save the adjustment and return to main interface. But the timing silent function is not set successfully.

3.2.3.12 Timing Temperature

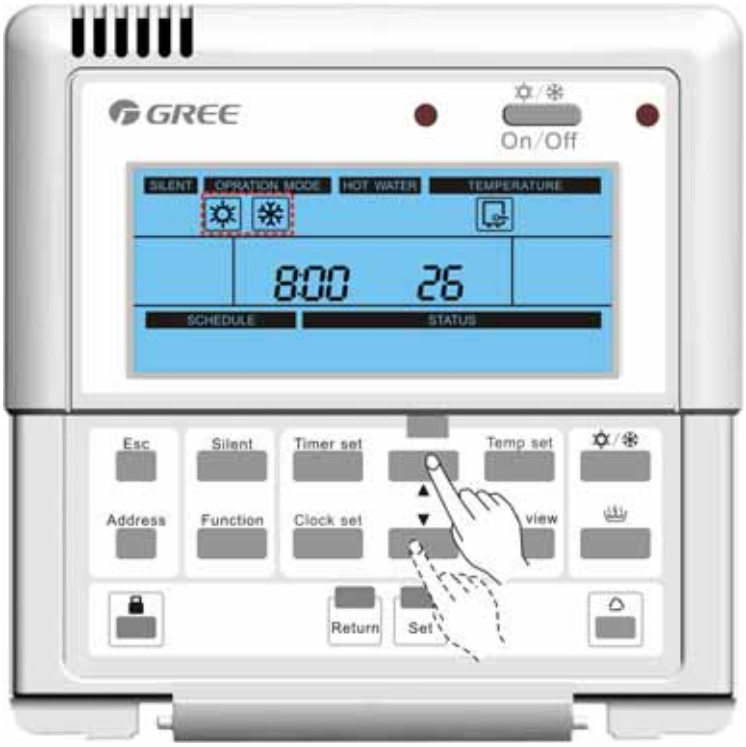
When the wired controller shows the main interface, press “Timer set” & “Temp set” for 5 seconds to enter timing temperature setting interface.

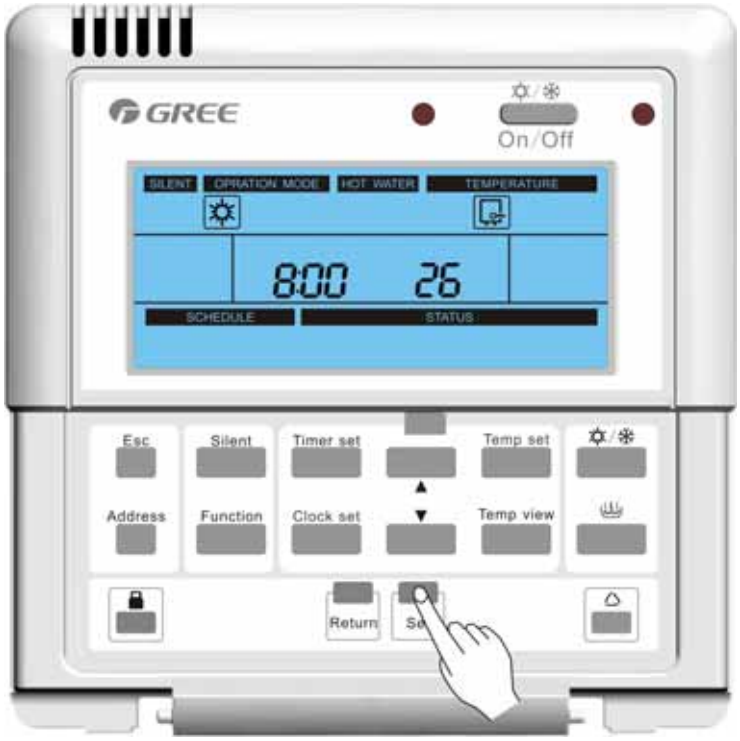


Steps for setting timing temperature

Step 1: Select timing temperature mode

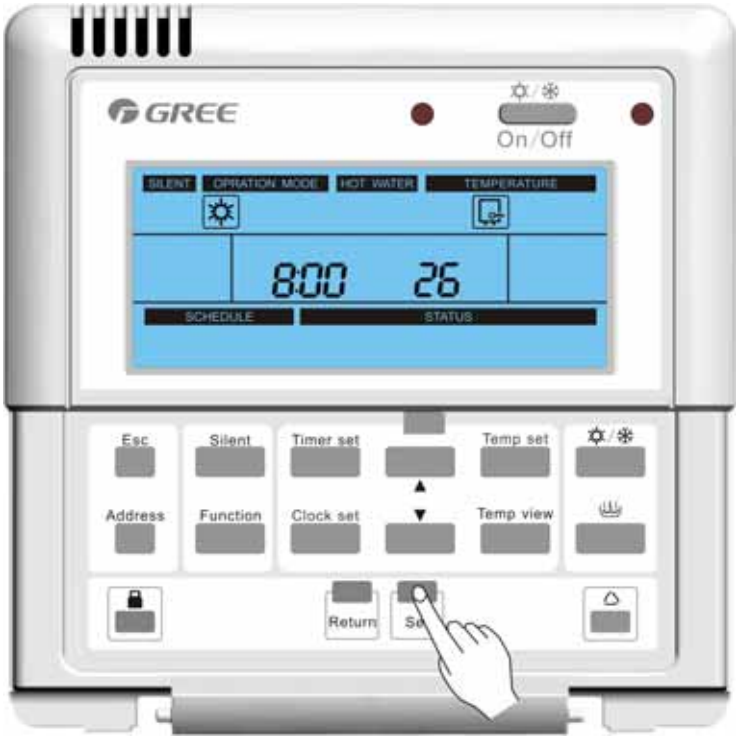
Selection of timing temperature mode: the last timing temperature mode is defaulted. Heat mode is defaulted upon first energization. Press "▲" and "▼" button to select timer mode, including heating and cooling. Press "Set" button to save the selection. Then timing temperature function is set successfully.



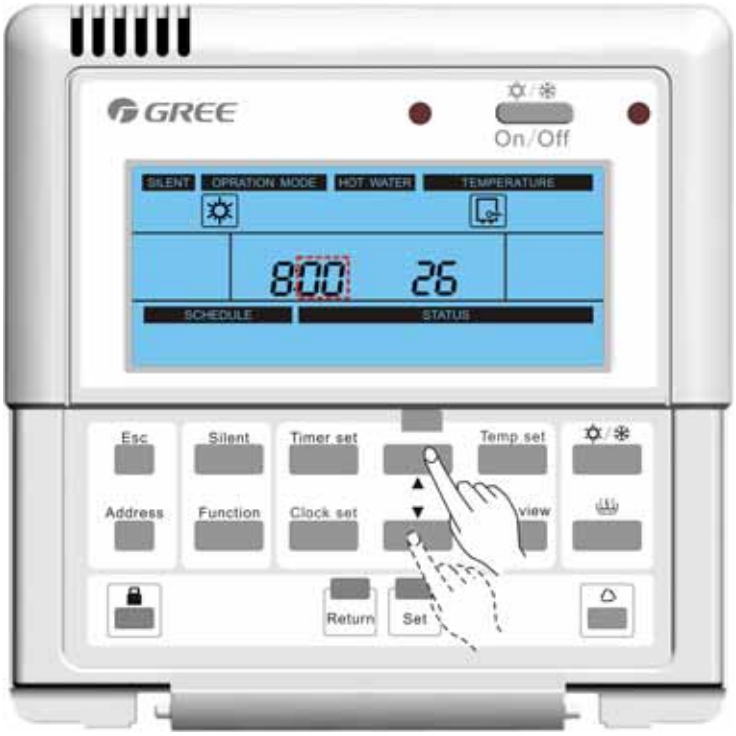


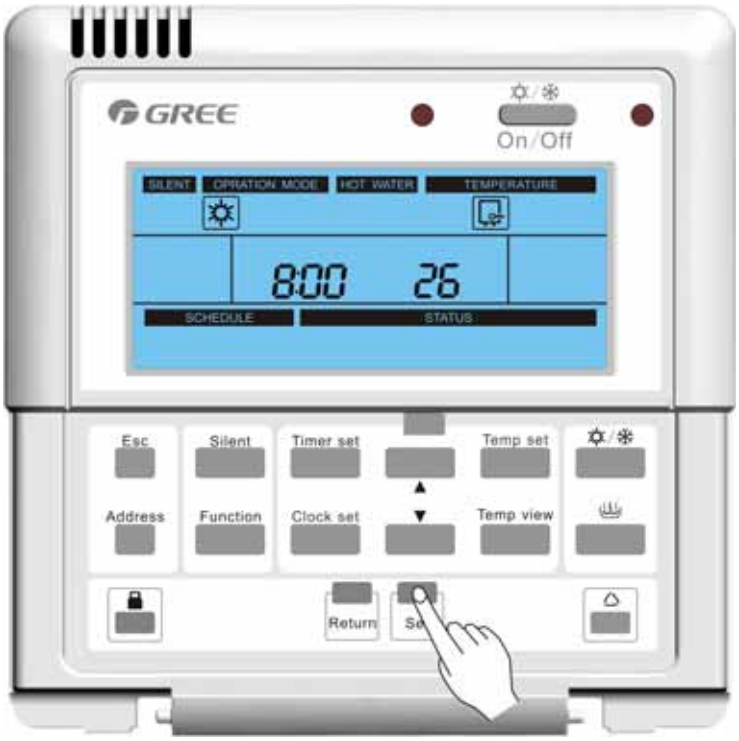
Step 2: Set timing temperature of the first period

1) The last timing temperature of the first period is defaulted. (The defaulted time is 8:00 upon initial energization. If the reference point is indoor temperature, the defaulted temperature is 20℃ for cooling and 26℃ for heating. If the reference point is outflow water temperature, the defaulted temperature is 18℃ for cooling and 40℃ for heating.) Press "▲" and "▼" button to adjust starting hour. Press "Set" to save the adjustment.

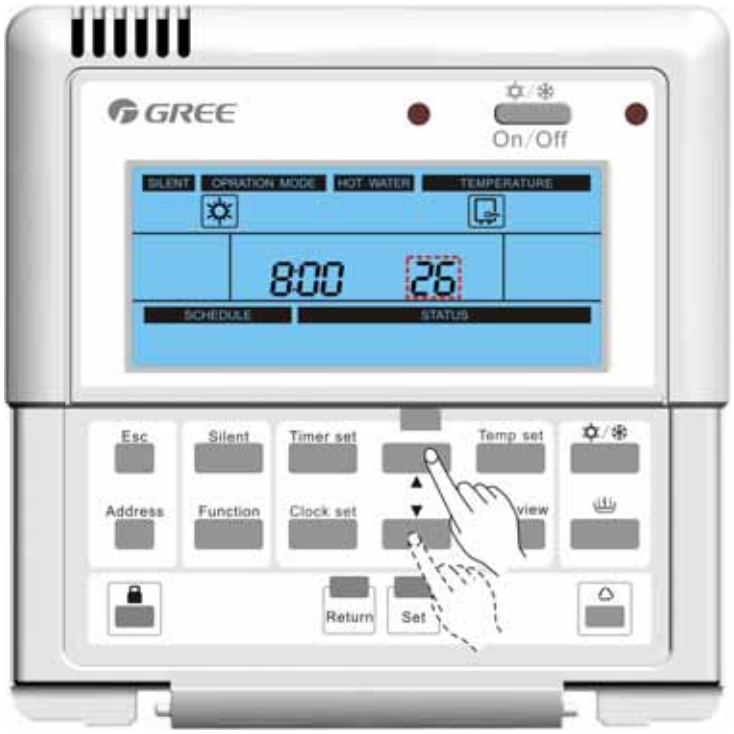


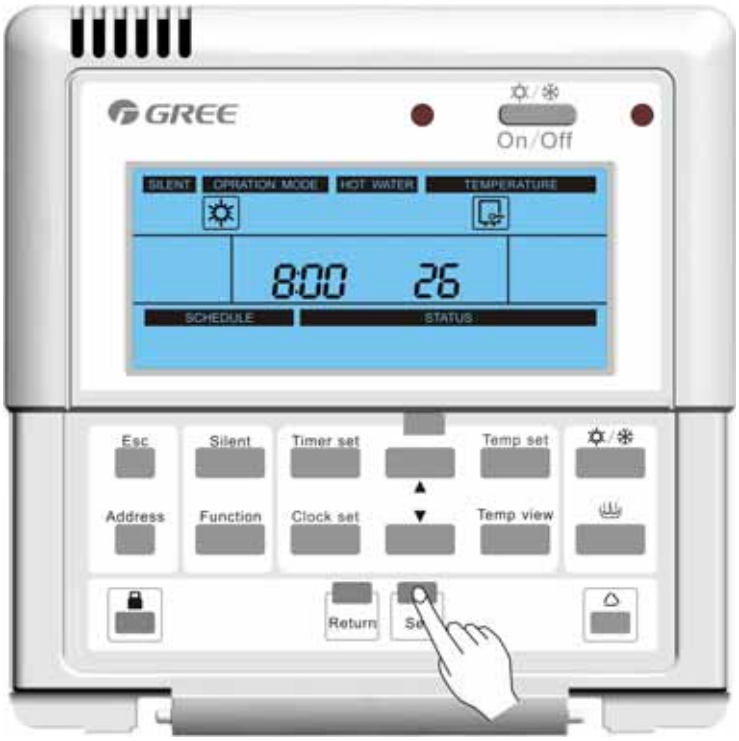
2) and to set starting minute of first period. Press “▲” and “▼” button to adjust starting minute. Press “Set” to save the adjustment.





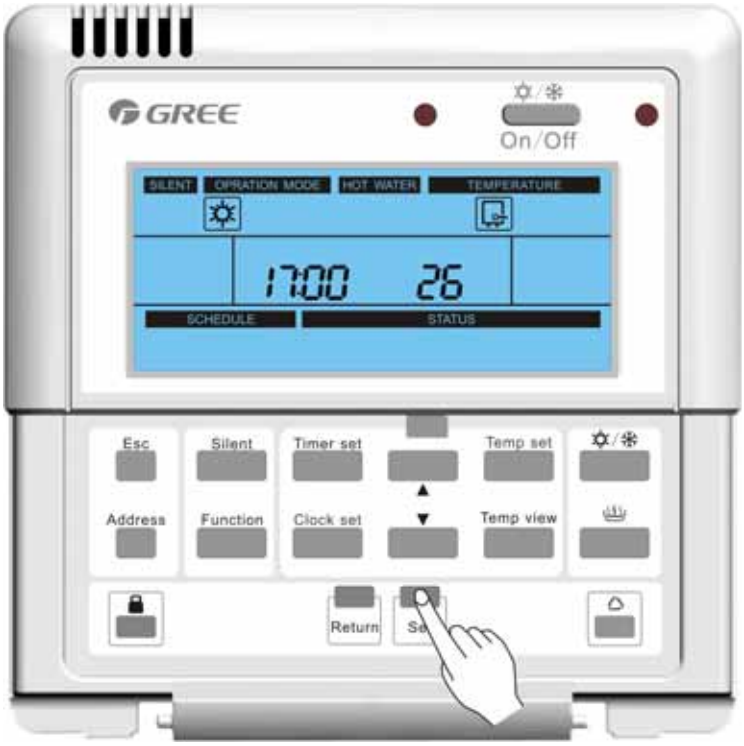
3) and to set timing temperature of the first period. Press “▲” and “▼” button to adjust temperature. Press “Set” to save the adjustment and to set timing temperature of the second period. During operation, press “Return” or “Esc” button to save the set value and return to main interface. The unset items are defaulted to be the last set values.



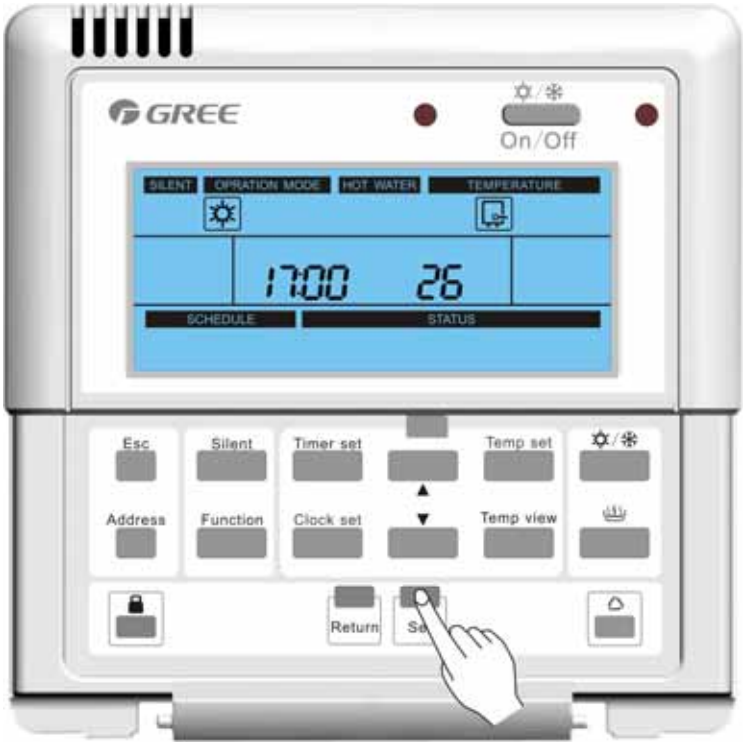


Step 3: Set timing temperature of the second period

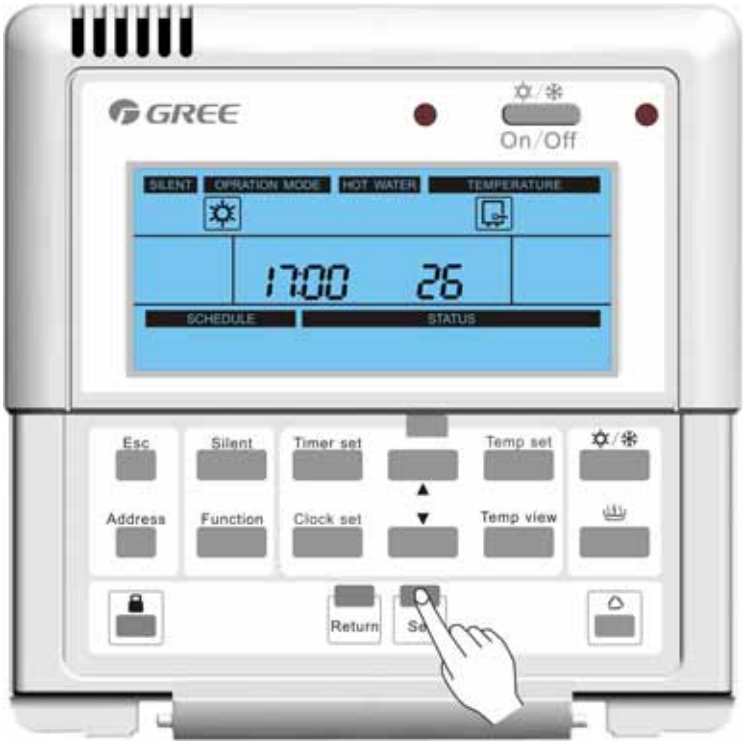
1) The last timing temperature of the first period is defaulted. (The defaulted time is 17:00 upon initial energization. If the reference point is indoor temperature, the defaulted temperature is 20℃ for cooling and 26℃ for heating. If the reference point is outflow water temperature, the defaulted temperature is 18℃ for cooling and 40℃ for heating.) Press "▲" and "▼" button to adjust starting hour. Press "Set" to save the adjustment and to set starting minute of second period.



2) Press “▲” and “▼” button to adjust starting minute. Press “Set” to save the adjustment and to set timing temperature of the second period. Press “▲” and “▼” button to adjust temperature.

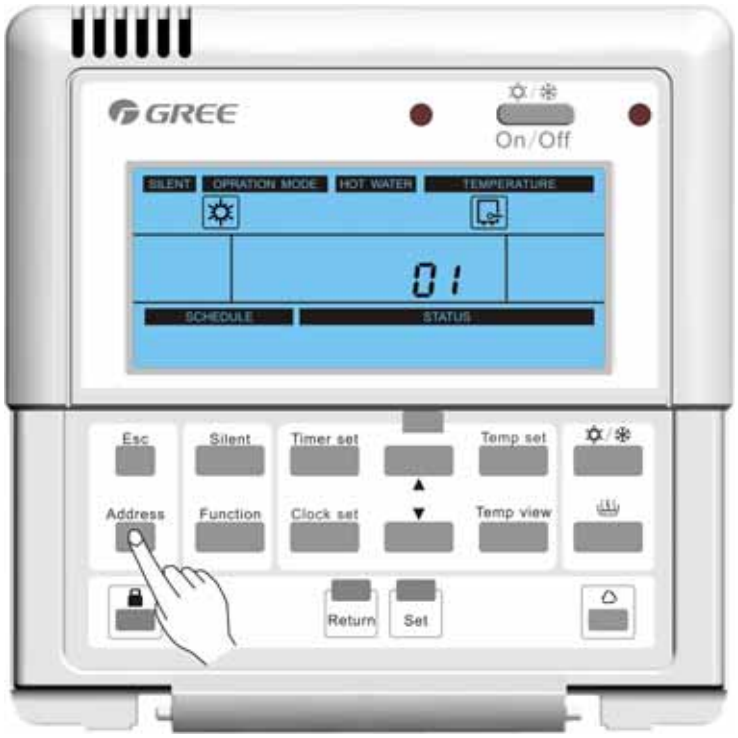


3) Press “Set” to save the adjustment. During operation, press “Return” or “Esc” button to save the set value and return to main interface. The unset items are defaulted to be the last set values.



3.2.3.13 Set address

1) Press Address button to enter address viewing mode.



2) Press Set button to enter address setting mode, address is flashing.

3) Press button to adjust desired address (Range:0~125,127-253).

4) Press Set button to save the desired address.

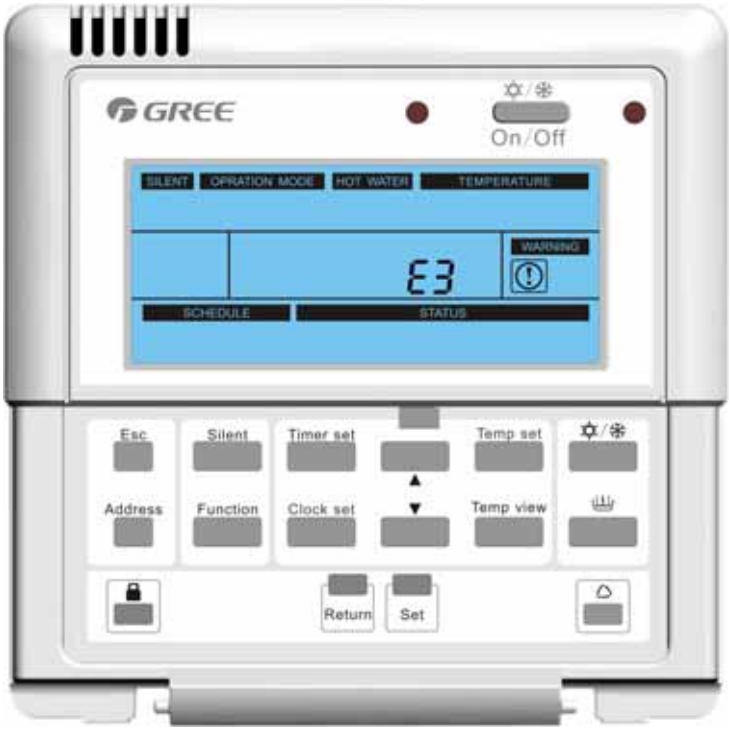
5) Press Esc button or Return button to return to the main menu. The system will automatically release without any input after 20 seconds.

3.2.3.14 Error Code Display

When the error is occurred to indoor unit or outdoor unit, the error code will be displayed on control panel.

Icon

will show.



The table of error code

Error code	Error description
F4	Malfunction of outdoor environment temperature sensor
F6	Malfunction of defrost temperature sensor
F7	Malfunction of discharge temperature sensor
F5	Malfunction of suction temperature sensor
EF	Malfunction of outdoor fan
E5	Overload protection of compressor or malfunction of driver
E1	High pressure protection of compressor
E3	Low pressure protection of compressor
E4	High-temperature protection of discharge
C5	Malfunction of indoor capacity switch
E6	Communications failure between outdoor and indoor mainboard
E6	Communications failure between outdoor mainboard and wired controller
Fc	Malfunction of high pressure sensor
F9	Malfunction of outlet temperature sensor
dH	Malfunction of backup outlet temperature sensor
F1	Malfunction of liquid pipe temperature sensor inside refrigerant
F8	Malfunction of inlet temperature sensor
FE	Malfunction of the second sanitary water tank temperature sensor
FL	Malfunction of the first sanitary water tank temperature sensor
F3	Malfunction of gas pipe temperature sensor inside refrigerant
dF	Malfunction of other thermal outlet temperature sensor
F0	Malfunction of remote room temperature sensor
Ec	Malfunction of water switch
E2	Indoor anti-frozen protetion
No display	Over temperature of sanitary water tank temperature
Ed	Over temperature of outlet temperature(This error code will not displayed on wired controller but only on mainboard of outdoor unit)
No display	Over temperature of solar outlet temperature
EH	Malfunction of the first internal electric heater connection
EH	Malfunction of the second internal electric heater connection
EH	Malfunction of sanitary water tank electric heater connection
dU	Pull-out gate-controller

3.2.3.15 Test Mode

The test mode setting is as follow:

(1). Operate the wired controller to let the heating/cooling operation OFF and water heating OFF and then hold down ESC and Return buttons at the same time for 10 seconds into test mode.

(2). In test mode, except ▲, ▼,Set, Esc and Return buttons all buttons are shielded.

(3). In test mode

Press ▲or ▼ button to select the type of test mode. There are 2 types in total for selection.

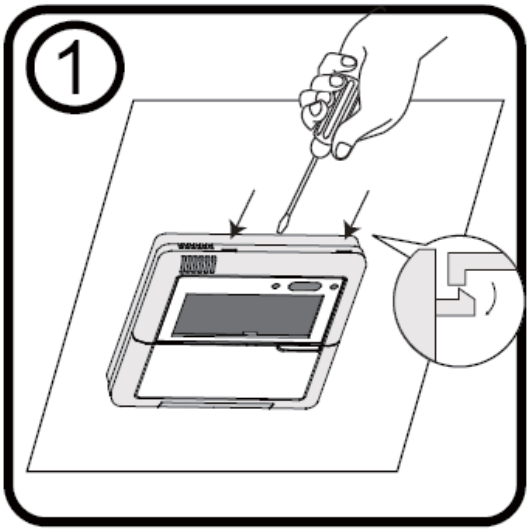
① If the minute display area of CLOCK is 01, it means test mode 1---cooling operation.

② If the minute display area of CLOCK is 02, it means test mode 2---heating operation.

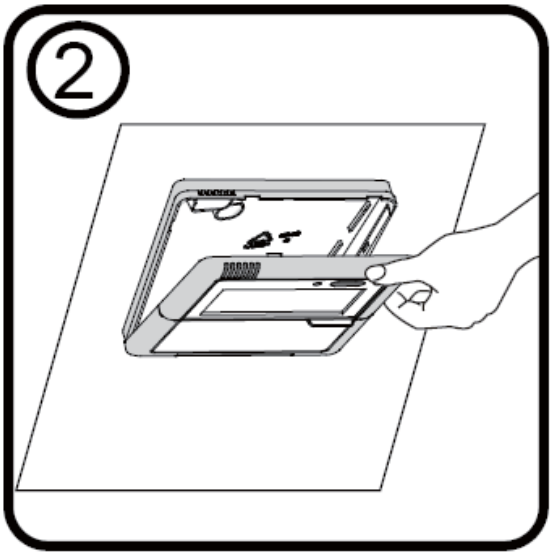
The compressor's frequency during the operation will be adjusted according to the difference between the actual leaving water temperature and target set temperature, so test mode is mainly for nominal performance testing.

3.3 Installation

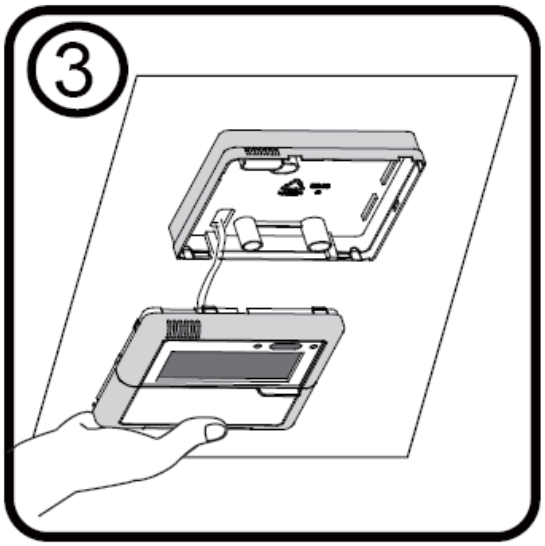
(1) Open front panel of indoor unit and release the clasp of wired controller as shown in Fig 1.

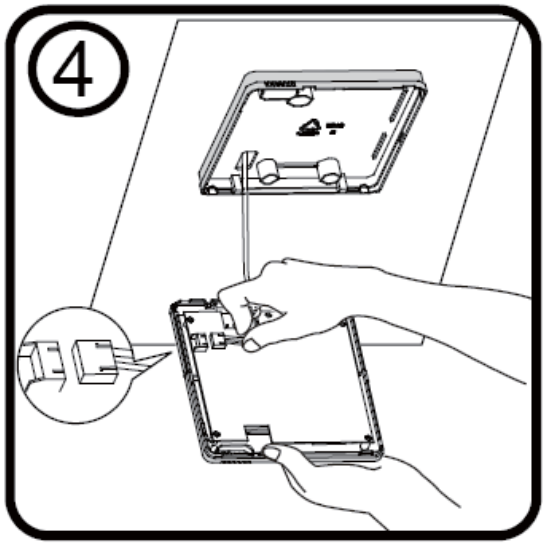


(2) Manually remove the LCD of wired controller with caution.

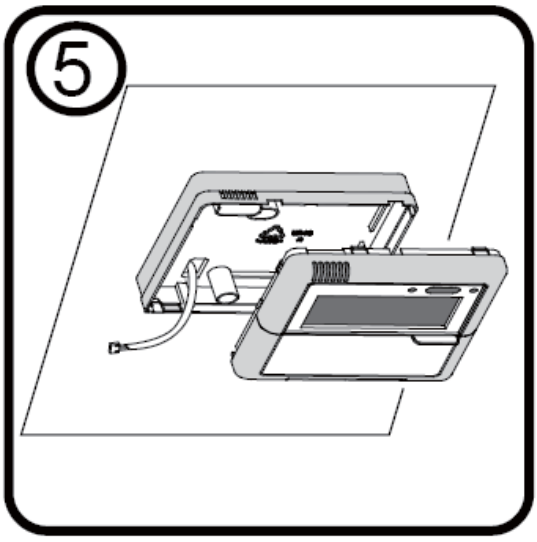


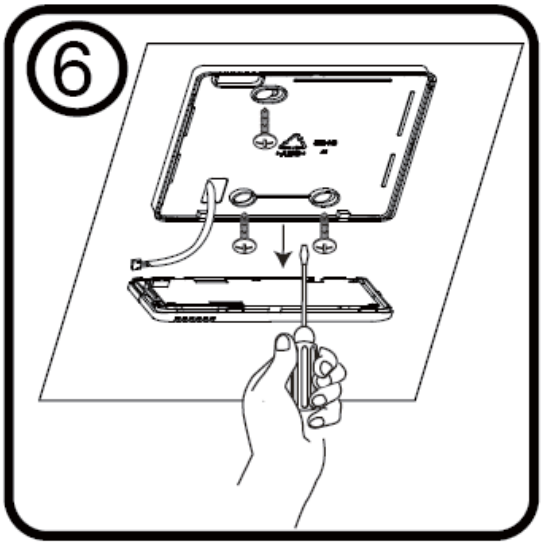
(3) After LCD is removed, unplug communication line according Fig 4.





(4) Then remove three retaining screws on mounted plate.



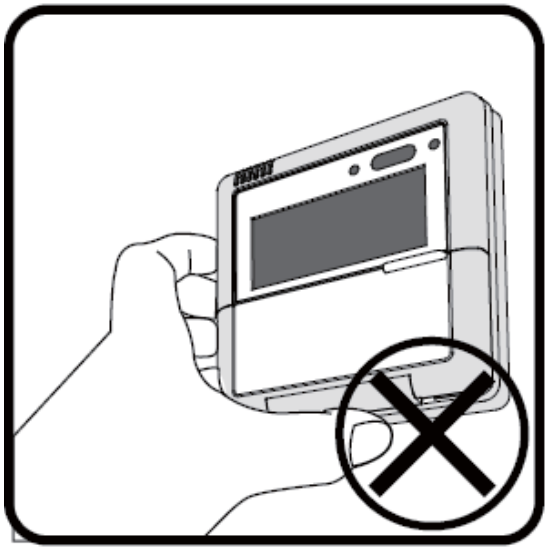


The following disassembly methods are incorrect:

Disassembly from top

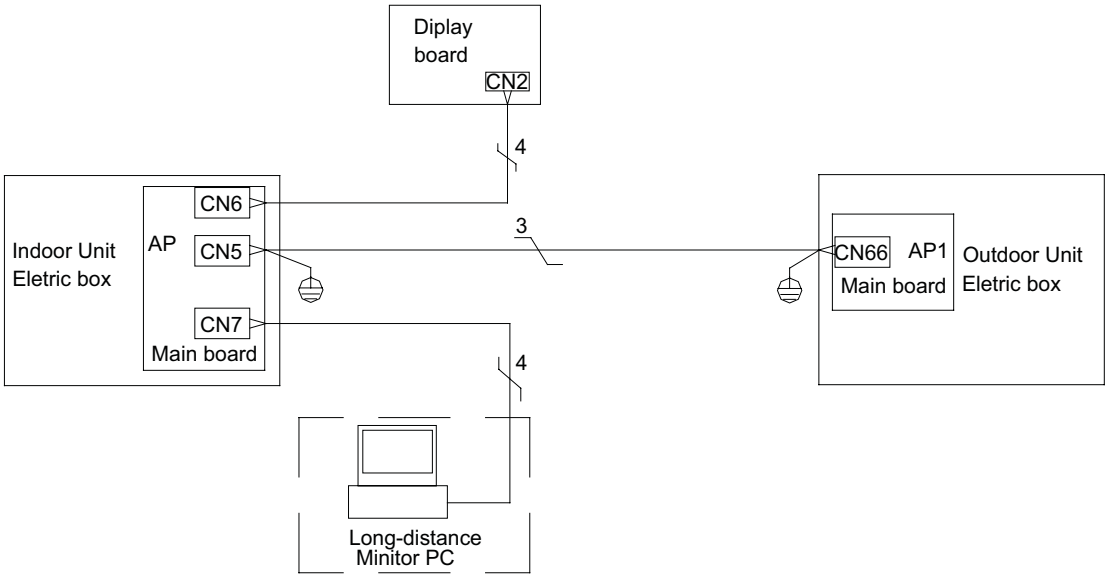
Disassembly from bottom

Disassembly from left side



Disassembly from right sid

4 CONTROL WIRING DESIGN



Installation Instruction :

(1) Wired controller connects to terminal CN6 on mainboard of indoor unit by 4-core communication line.

(2) The indoor unit connects to outdoor unit by 3-core communication line. Wiring terminal of indoor unit is CN5 and that of the outdoor unit is CN66.

(3) Remote monitoring device connects to terminal CN7 of indoor unit by 4-core communication line.

INSTALLATION

INSTALLATION

1 INSTALLATION OF UNITS

1.1 Installation Positions

1.1.1 Installation Positions of Outdoor

- Outdoor unit must be installed on a firm and solid support.
- Outdoor unit shall be installed close to the indoor unit, hence to minimize the length and bends of cooling pipe.
- Avoid placing the outdoor unit under window or between two constructions, hence to prevent normal operating noise from entering the room.
- Air flow at inlet and outlet shall not be blocked.
- Install at a well-ventilated place, so that the machine can absorb and discharge sufficient air.
- Do not install at a place where flammable or explosive goods exist or a place subject to severe dust, salty fog and polluted air.

1.1.2 Installation Positions of Indoor

- Avoid direct sunshine.
- Ensure the hanger rod, ceiling and building structure have sufficient strength to support the weight of air conditioner unit.
- Drainage pipe is easy to connect out.
- Indoor and outdoor connection pipes are easy to go outdoors
- Do not install at a place where flammable or explosive goods exist or flammable or explosive gas might leak.
- Do not install at a place subject to corrosive gas, severe dust, salty fog, smoke or heavy moisture.
- Air flow at inlet and outlet air is not blocked.

Note:

The water pressure gage is installed in returning water line in the indoor unit,Please adjust the hydraulics system pressure according to next item:

① If the pressure is less than 0.5 bar, please recharge the water immediately;

② When recharging, the hydraulics system pressure should be not more than 2.5Bar.

1.1.3 Installation Positions of Water Tank

- The insulated water tank should be installed and keep levelly within 5m and vertically within 3m from the Indoor unit. It can be installed in the room.
- Standing water tank must be installed vertically with the bottom on the ground, never suspended. Installation place must be firm enough and the water tank should be fixed on the wall with bolts to avoid vibration, as shown in the following figure. Weight capacity of water tank during installation should also be considered.
- The minimum clearance from the water tank to combustible surface must be 500mm.
- There should be water pipe, hot water joint and floor drain near the water tank in favor of water replenishment, hot water supply and drainage of water tank.
- Connection of inlet/outlet waterway: Connect the safety check valve attached with the unit (→ points at insulated water tank) with the water inlet of water tank with PPR pipe according to the following figure, sealing with unsintered tape. The other end of the safety check valve should connect with tap water joint. Connect the hot water pipe and water outlet of water tank with PPR pipe.

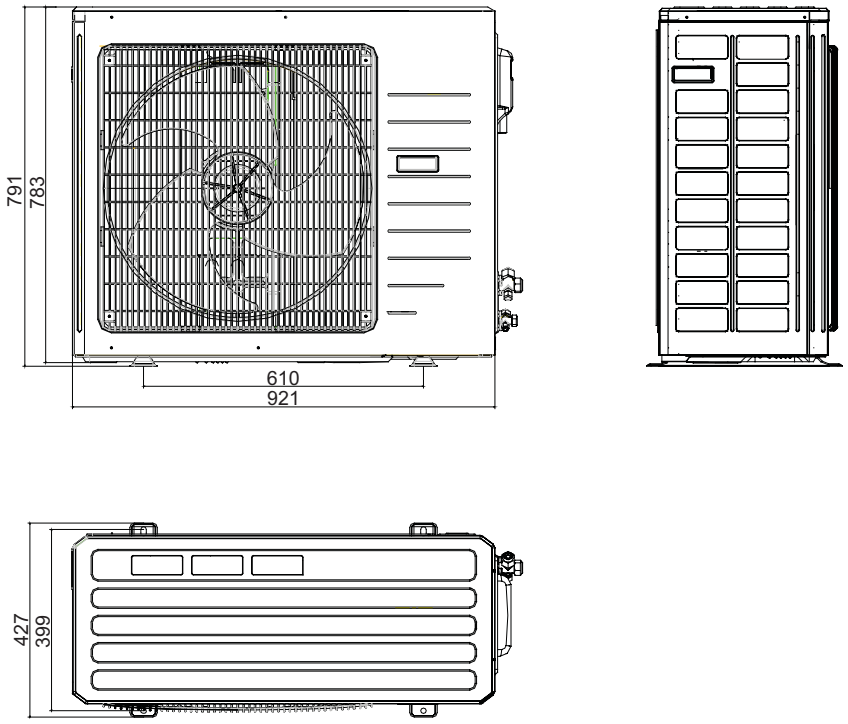
1.2 Matters Need Attention

- The installation of unit must be in accordance with national and local safety codes.
- Installation quality will directly affect the normal use of air conditioner unit. The user is prohibited from installation by himself. Please contact your dealer after buying this machine. Professional installation workers will provide installation and test services according to installation manual.
- Do not connect to power until all installation work is completed.

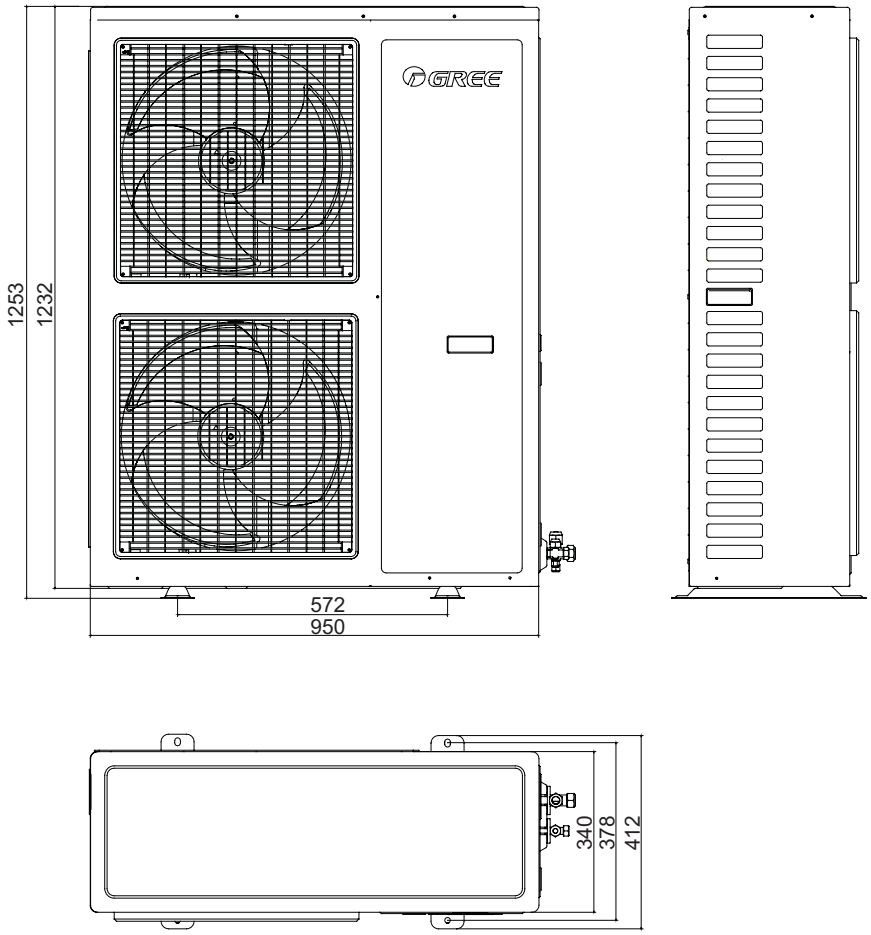
1.3 Dimension Data and Installation Guide

1.3.1 Outdoor

GRS-CQ6.0Pd/Na-K(O),GRS-CQ8.0Pd/Na-k(O),GRS-CQ10Pd/Na-K(O):

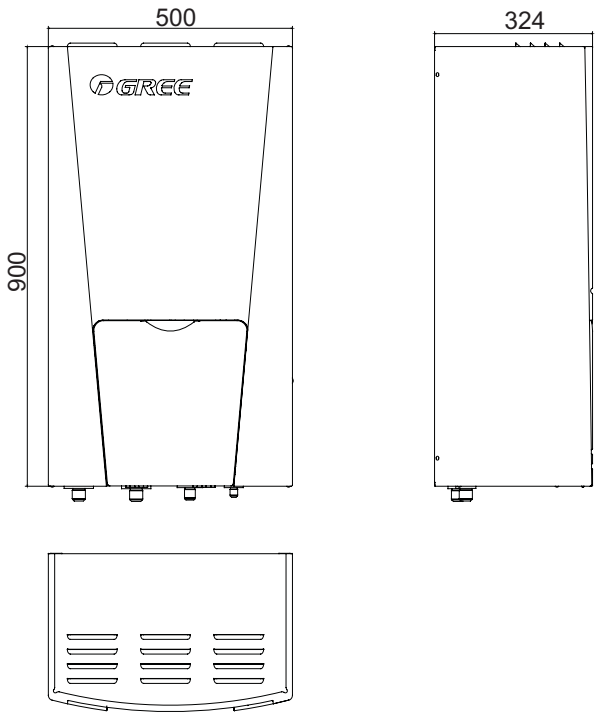


GRS-CQ12Pd/Na-K(O),GRS-CQ14Pd/Na-K(O),GRS-CQ16Pd/Na-K(O),GRS-CQ12Pd/Na-M(O),GRS-CQ14Pd/Na-M(O),GRS-CQ16Pd/Na-M(O),GRS-CQ16Pd/Na-H(O):



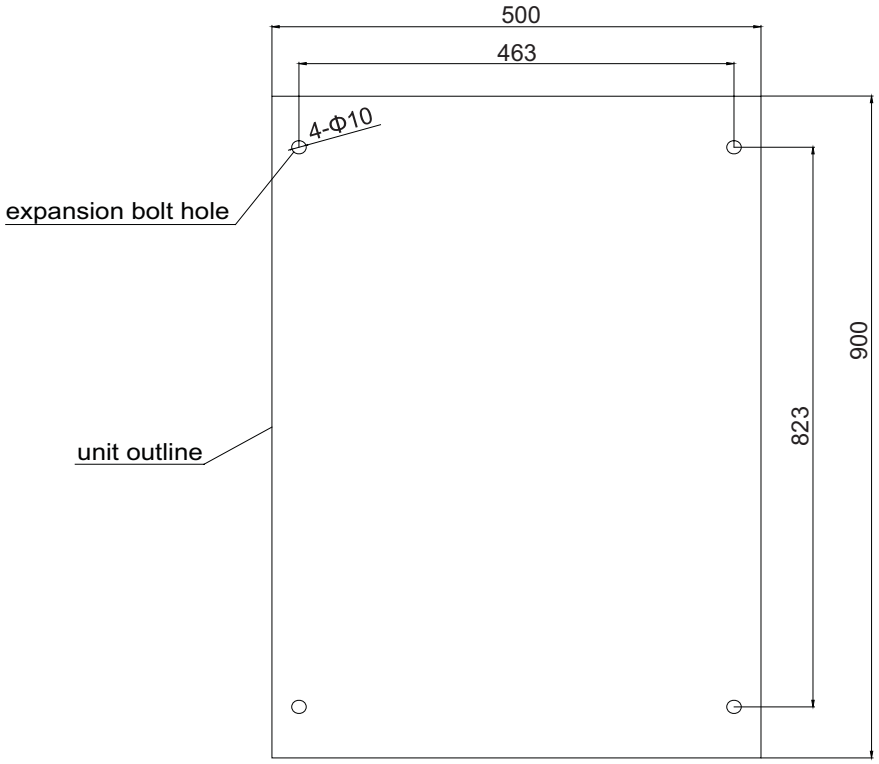
1.3.2 Indoor

GRS-CQ6.0Pd/Na-K(I),GRS-CQ8.0Pd/Na-k(I),GRS-CQ10Pd/Na-K(I),GRS-CQ12Pd/Na-K(I),GRS-CQ14Pd/Na-K(I),GRS-CQ16Pd/Na-K(I),GRS-CQ12Pd/Na-M(I),GRS-CQ14Pd/Na-M(I),GRS-CQ16Pd/Na-M(I),GRS-CQ16Pd/Na-H(I):

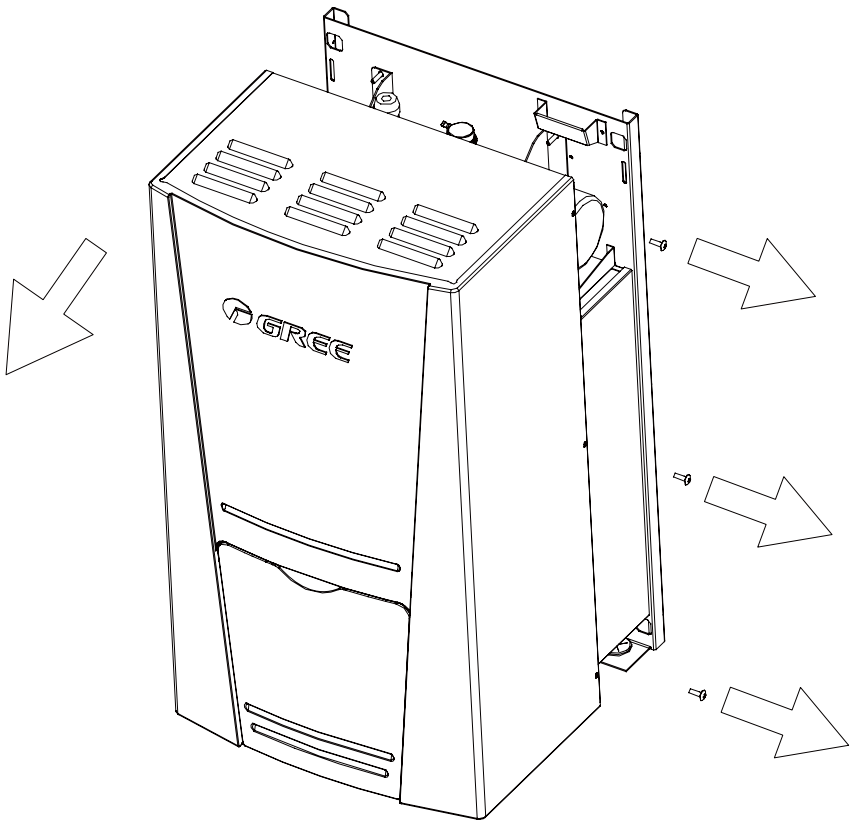


Install process of indoor unit

Step1: Drilling hole on the wall in the following draw.

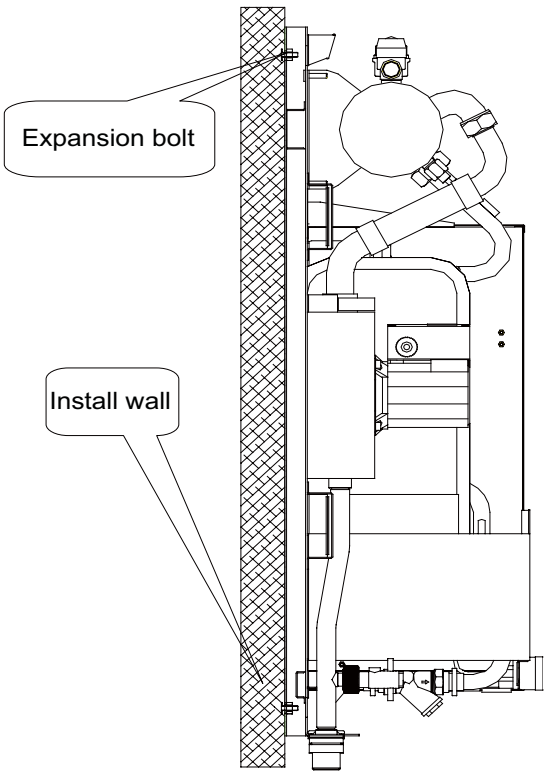


Step2: Releasing screws, detach front cover from the indoor unit.

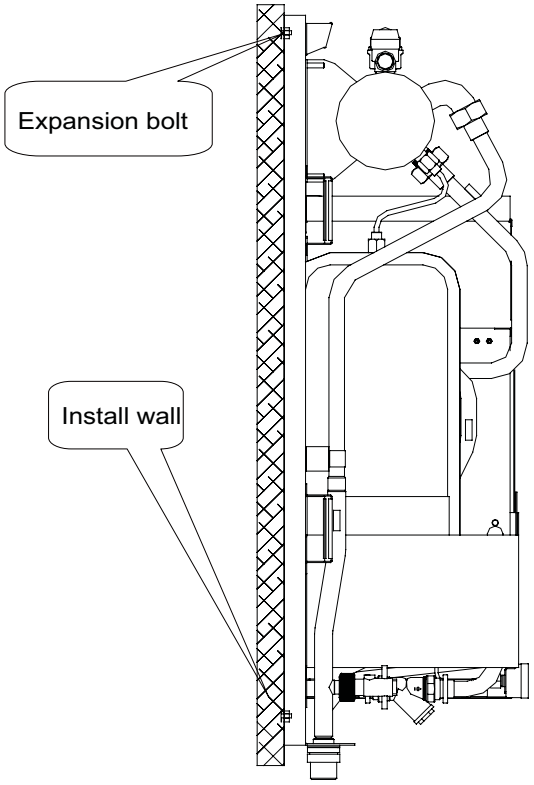


Step3: Attaching indoor unit to the wall make use of accessory expansion bolt.

1). GRS-CQ6.0Pd/Na-K(I), GRS-CQ8.0Pd/Na-K(I), GRS-CQ10Pd/Na-K(I), GRS-CQ12Pd/Na-K(I), GRS-CQ14Pd/Na-K(I), GRS-CQ16Pd/Na-K(I), GRS-CQ12Pd/Na-M(I), GRS-CQ14Pd/Na-M(I), GRS-CQ16Pd/Na-M(I)



2). GRS-CQ16Pd/Na-H(I)



⚠CAUTION!

While lifting the indoor unit, at least two persons should be joined. Weight of the indoor unit is almost 52kg.

Precautions on Installation of Indoor Unit

① Indoor unit shall be vertically mounted on the wall of the room with expansion bolt.

② Keep the Indoor unit away from heat sources such as heat sink and so on in the room as much as possible.

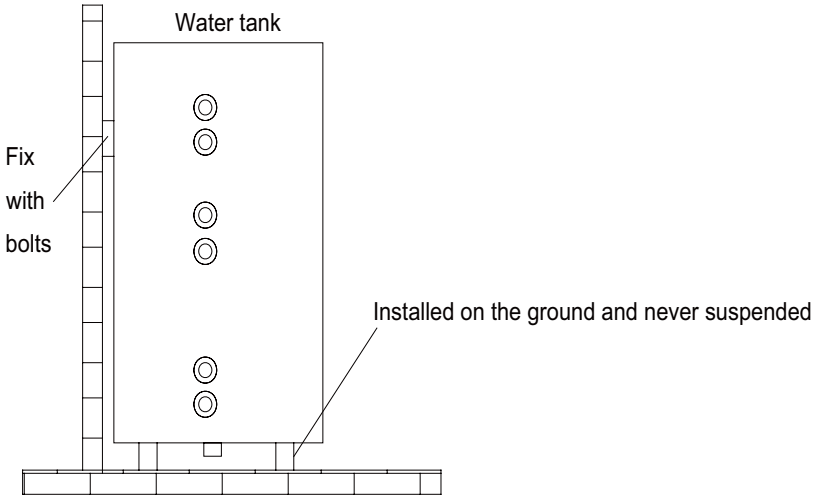
③ Keep the indoor unit as close as possible to outdoor unit. Level distance between connection pipes can not exceed 30m and vertical distance can not exceed 15m.

1.3.3 Installation of Insulated Water Tank

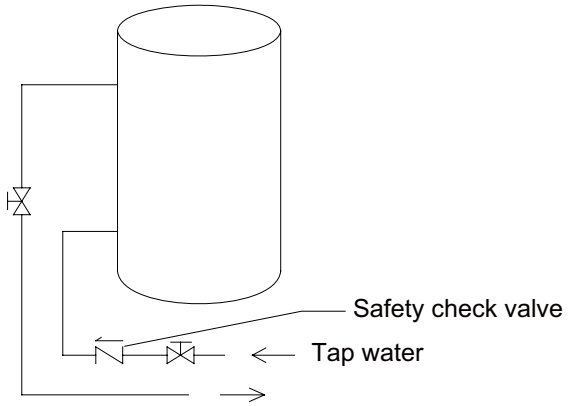
1.3.3.1 Installation Measure

The insulated water tank should be installed and keep levelly within 5m and vertically within 3m from the Indoor unit. It can be installed in the room.

Standing water tank must be installed vertically with the bottom on the ground, never suspended. Installation place must be firm enough and the water tank should be fixed on the wall with bolts to avoid vibration, as shown in the following figure. Weight capacity of water tank during installation should also be considered.



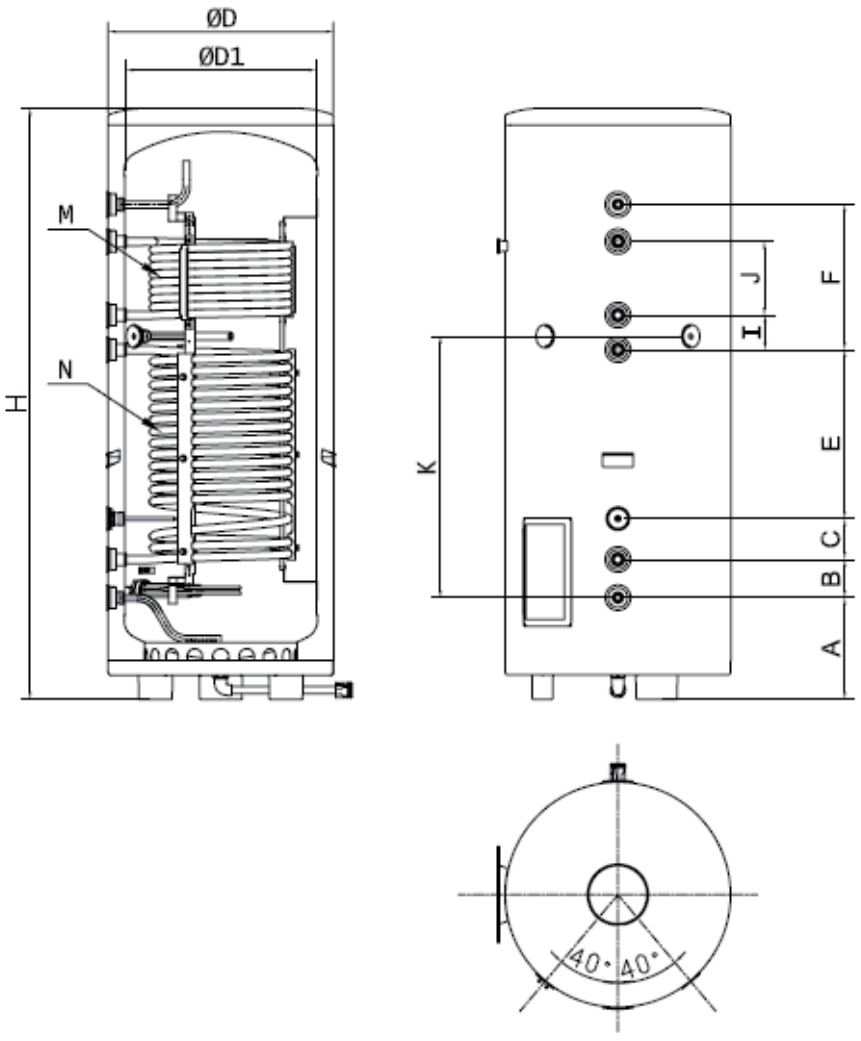
- The minimum clearance from the water tank to combustible surface must be 500mm.
- There should be water pipe, hot water joint and floor drain near the water tank in favor of water replenishment, hot water supply and drainage of water tank.
- Connection of inlet/outlet waterway: Connect the safety check valve attached with the unit (→ points at insulated water tank) with the water inlet of water tank with PPR pipe according to the following figure, sealing with unsintered tape. The other end of the safety check valve should connect with tap water joint. Connect the hot water pipe and water outlet of water tank with PPR pipe.



Note:

For safe use of water, water outlet/inlet of water tank must connect with a certain length of PPR pipe ,L ≥70×R^2(cm, R is inside radius of the pipe). Moreover, heat preservation should be conducted and metal pipe can not be used. For the first use, water tank must be full of water before the power is on.

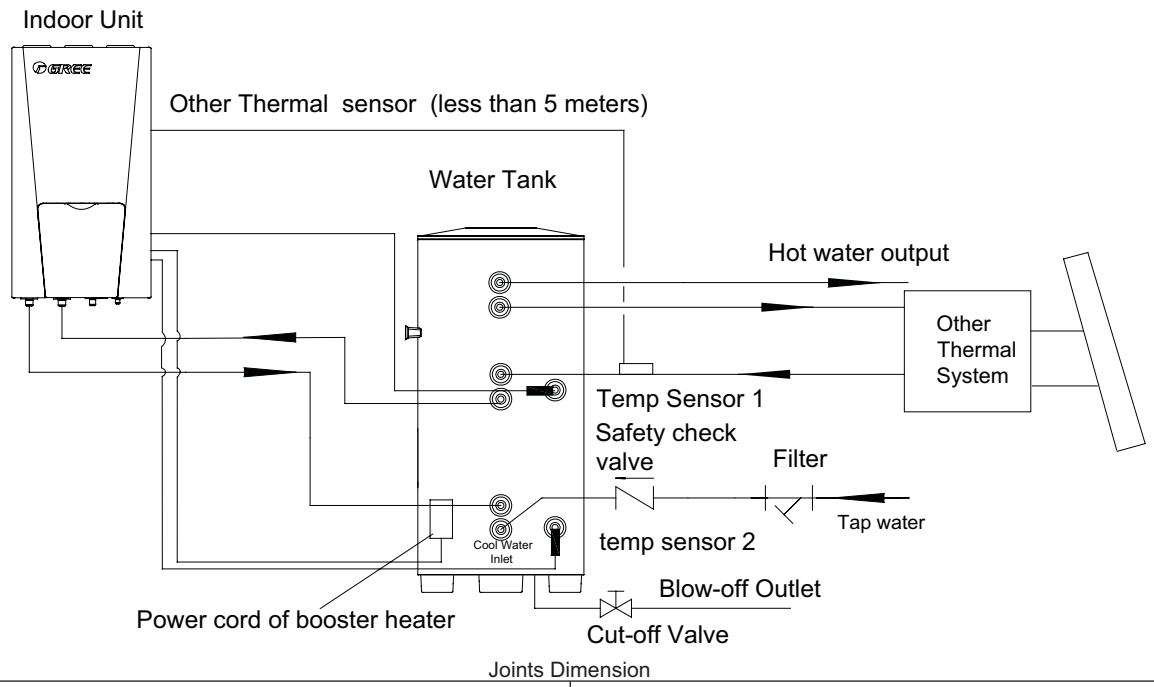
Outline dimension and parameter of water tank



Models		SXVD200LCJ/A-K	SXVD200LCJ2/A-K	SXVD300LCJ/A-K	SXVD300LCJ2/A-K
		SXVD200LCJ/A-M	SXVD200LCJ2/A-M	SXVD300LCJ/A-M	SXVD300LCJ2/A-M
		SXVD200LCJ/A-H	SXVD200LCJ2/A-H	SXVD300LCJ/A-H	SXVD300LCJ2/A-H
Litre		200L	200L	300L	300L
coil specification		SUS304 Φ22×0.8			
coil length	M	\	10m	\	10m
	N	13m	13m	18.5m	18.5m
D(mm)		540		620	
D1(mm)		438		528	
H(mm)		1595		1620	
A(mm)		272		280	
B(mm)		105			
C(mm)		112			
E(mm)		432		464	
F(mm)		431		399	
I(mm)		\	80	\	95
J(mm)		\	247.5	\	202.5
K(mm)		739		718	
Outline (Diameter×H) (mm)		Φ540×1595		Φ620×1620	
Net weight	kg	68	71	82	87

Connection of Waterway System

- If connection between water tank and indoor unit should be through the wall, drill a holeφ70 for pass of circulating water pipe. It is unnecessary if the hole is not needed.
- Preparation of pipelines: Circulating water outlet/inlet pipe must be hot water pipe, PPR pipe with nominal out diameter of dn25 and S2.5 series (wall thickness of 4.2mm) being recommended. Cooling water inlet pipe and hot water outlet pipe of water tank should also be hot water pipe, PPR pipe with nominal out diameter of dn20 and S2.5 series (wall thickness of 3.4mm) being recommended. If other insulated pipes are adopted, refer to the above dimensions for out diameter and wall thickness.
- Installation of circulating water inlet/outlet pipes: Connect the water inlet of unit with circulating outlet of water tank and water outlet of unit with circulating inlet of water tank.
- Installation of water inlet/outlet pipes of water tank: Safety check valve (→ on the valve body points at water tank), filter and cut-off valve must be installed for water inlet pipe according to the installation sketch of unit. At least a cut-off valve is needed for the water outlet pipe.
- Installation of blow-off pipe at the bottom of water tank: Connect a piece of PPR pipe with drainage outlet to floor drain. A cut-off valve must be installed in the middle of the drainage pipe and at the place where it is easy to be operated by the users.
- After connection of all waterway pipelines, perform leakage test firstly (refer to debugging of the unit). After that, bind up the water pipes, water temp sensor and wires with wrapping tapes attached with the unit.
- Refer to Installation Sketch of Unit for details.



Joints Dimension

Description	Joint pipe thread
Circulating water inlet/outlet of main unit	1″Male BSP
Cooling water inlet of water tank	1/2″Female BSP
Circulating water inlet/outlet of water tank	3/4″Female BSP
Hot water outlet of water tank	1/2″Female BSP

Note:

①. Distance between indoor unit and water tank should not exceed 5m levelly and 3m vertically. If higher, please contact with us. Water tank on lower and main unit on higher side is recommended.

②. Prepare the materials according to the above joints dimension. If cut-off valve is installed outside the room, PPR pipe is recommended to avoid freeze damage.

③. Waterway pipelines can't be installed until water heater unit is fixed. Do not let dust and other sundries enter into pipeline system during installation of connection pipes.

④. After connection of all waterway pipelines, perform leakage test firstly. After that, perform heat preservation of waterway system; meanwhile, pay more attention to valves and pipe joints. Ensure enough thickness of insulated cotton. If necessary, install heating device for pipeline to prevent the pipeline from freezing.

⑤. Hot water supplied from insulated water tank depends on pressure of water tap, so there must be supply of tap water.

⑥. During using, the cut-off valve of cooling water inlet of water tank should be kept normally on.

1.3.4 Electric Wiring

1.3.4.1 Wiring Principle

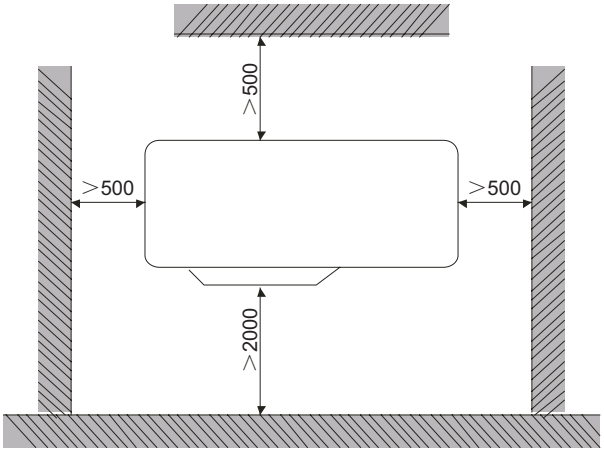
General principles

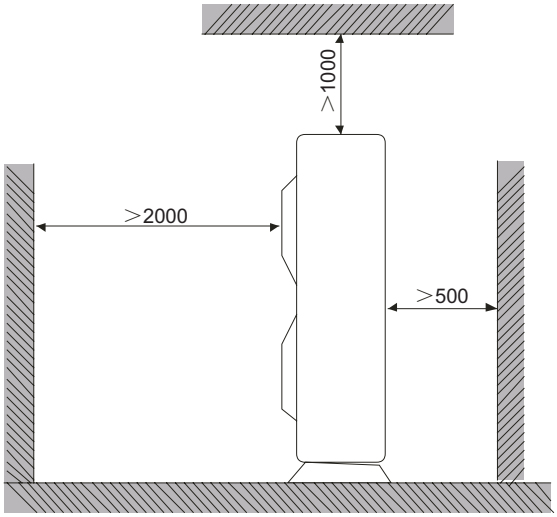
- Wires, equipment and connectors supplied for use on the site must be in compliance with provisions of regulations and engineering requirements.
- Only electricians holding qualification are allowed to perform wire connection on the site.
- Before connection work is started, the power supply must be shut off.
- Installer shall be responsible for any damage due to incorrect connection of the external circuit of the unit.
- Caution --- MUST use copper wires.

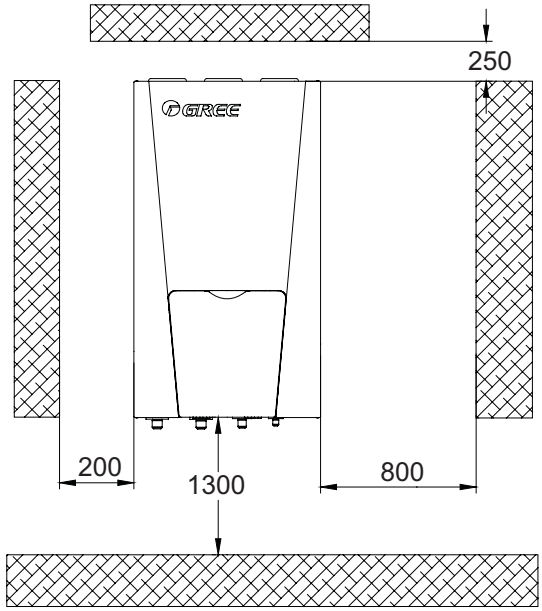
Connection of power cable to the electric cabinet of the unit

- Power cables should be laid out through cabling trough, conduit tube or cable channel.
- Power cables to be connected into the electric cabinet must be protected with rubber or plastic to prevent scratch by edge of metal plate.
- Power cables close to the electric cabinet of the unit must be fixed reliably to make the power terminal in the cabinet free from an external force.
- Power cable must be grounded reliably.

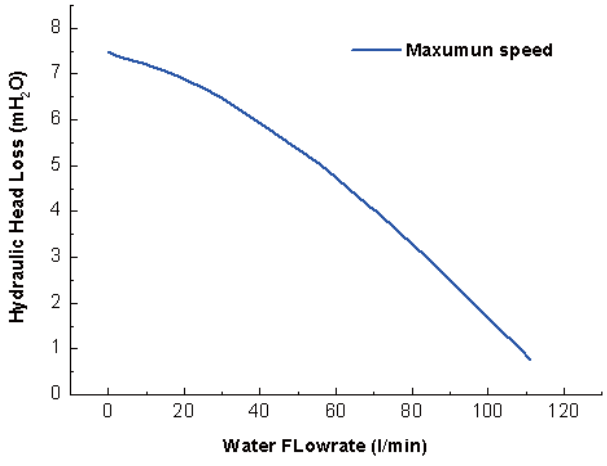
1.4 Installation Clearance Data

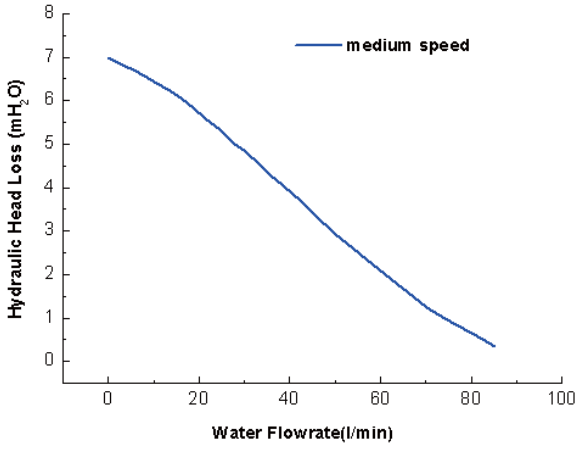






(1) Water Volume and Pump capacity



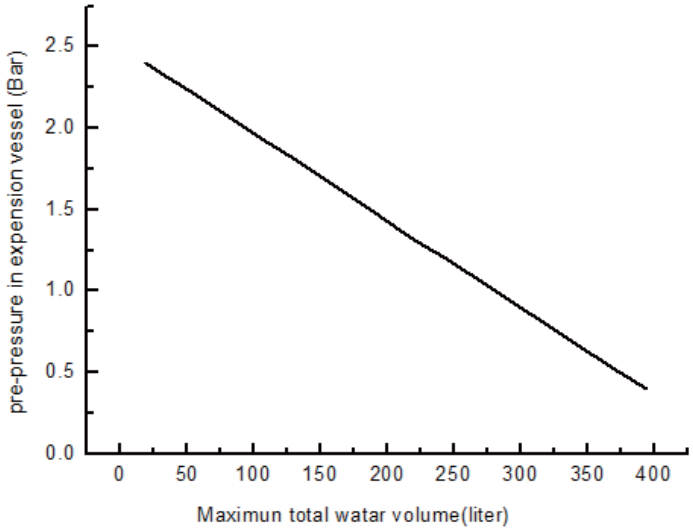


Note:

①. The water pump is three speed-adjustable(maximum/medium/minimum), In most case, we strongly recommended to set speed as maximum;

②. If the noise of the pump is not acceptable, we recommended change the default speed to medium speed, but to secure enough flow rate, do not set water speed as “Min”, it can lead unexpected flow rate error “EC”;

(2) Water Volume and Expansion Vessel Pressure



Note:

①. Expansion vessel is included which 10 liter and 1bar pre-pressure.

②. Total water volume of 280 liter is default; If total water is changed because of installation condition, the pre-pressure should be adjusted to secure proper operation. If the indoor unit is located at the highest position, adjustment is not required;

③. Minimum total water volume is 20 liter;

④. To adjust pre-pressure, use nitrogen gas by certificated installer.

1.5 The method of calculating the charging pressure of expansion vessel needed to be adjusted is as follows.

During installation, if the volume of water system has changed, please check if the pre-set pressure of the expansion vessel needs to be adjusted according to the following formula:

P_g =(H/10+0.3) Bar (H ---the difference between installing location of indoor unit and the highest spot of water system.)

Ensure that the volume of water system is lower than the maximum volume required in the above figure. If it exceeds the range, the expansion vessel does not meet the installing requirement.

Installation height difference[1]	Water volume	
	<280L	>280L
<7 m	Adjustment is not necessary	1. Pre-set pressure needs to be adjusted according to the above formula. 2. Check if the water volume is lower than the maximum water volume. (with help of the above figure)
>7 m	1. Pre-set pressure needs to be adjusted according to the above formula. 2. Check if the water volume is lower than the maximum water volume. (with help of the above figure)	The expansion vessel is too small and adjustment is not available.

[1]**Note**:

Installation height difference: the difference between installing location of indoor unit and the highest spot of water system; if the indoor unit is located at the highest point of the installation, the installation height difference is considered 0m.

The minimum volume of the water system is 20 L.

Example 1: The indoor unit is installed 5m below the outdoor unit and the total volume of the water system is 100L.

Referring to the above figure, it is not necessary to adjust the pressure of the expansion vessel.

Example 2: The indoor unit is installed on the highest spot of the water system and the total water volume is 350L.

As the volume of water system is higher than 280L, it is necessary to adjust the pressure of the expansion vessel be lower.

The formula of calculating pressure

P_g =(H/10+0.3)=(0/10+0.3)=0.3 Bar

The maximum volume of the water system is about 410L. As the actual volume of the water system is 350L, the expansion vessel meets the installing requirement.

Adjust the pre-set pressure of the expansion vessel from 1.0Bar to 0.3Bar.

Selection of expansion valve

Formula:

$$v=\frac{c\cdot e}{1-\frac{1+p_1}{1+p_2}}$$

v --- Volume of expansion vessel

c --- Total water volume

p_1 --- Pre-set pressure of expansion vessel

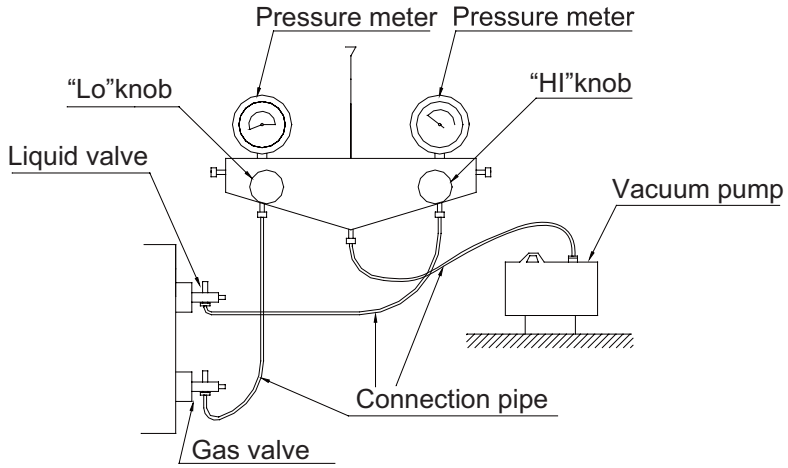
p_2 -- The highest pressure during running of the system (that is the action pressure of safety valve.)

e --- The expansion factor of water (the difference between the expansion factor of the original water temperature and that of highest water temperature.)

Water expansion factor in different temperature	
Temperature(℃)	Expansion factor e
0	0.00013
4	0
10	0.00027
20	0.00177
30	0.00435
40	0.00782
45	0.0099
50	0.0121
55	0.0145
60	0.0171
65	0.0198
70	0.0227
75	0.0258
80	0.029
85	0.0324
90	0.0359
95	0.0396
100	0.0434

(3) Filling of Refrigerant

- Before shipped out from manufacturer, the outdoor unit has been filled with refrigerant. Additional refrigerant may be filled when carrying out site connection of pipelines.
- Check the liquid valve and the gas valve of the outdoor unit. The valves shall be completely shut off.
- Connect a vacuum pump to the liquid valve and the gas valve of the outdoor unit to remove air from the inside of the indoor unit and the connecting pipe. Refer to the following figure:

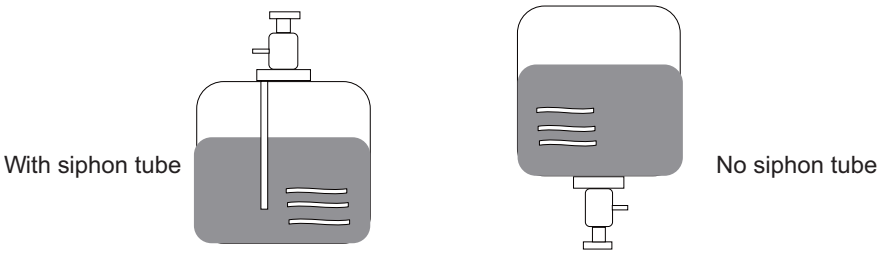


After confirming that there is no leakage from the system, when the compressor is not in operation charge additional R410A working fluid with specified amount to the unit through the filling opening of the liquid pipe valve of the outdoor unit.

1) Be sure to charge the specified amount of refrigerant in liquid state to the liquid pipe:

Since this refrigerant is a mixed refrigerant, adding it in gas form may cause the refrigerant composition to change, preventing normal operation.

2) Before charging, check whether the refrigerant cylinder is equipped with a siphon tube or not.



1.6 Connection of Pipeline

(1) Connection of Outlet Pipe for Indoor & Outdoor Unit

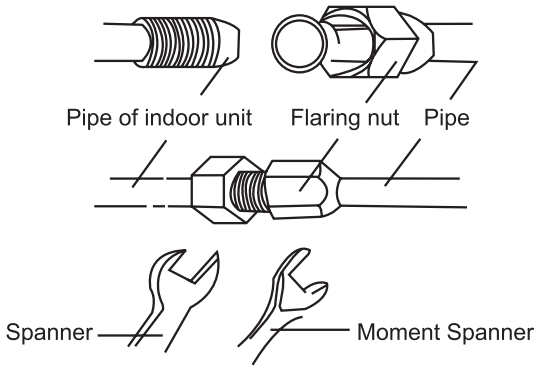
Align the expansion end of copper pipe with the center of threaded joint. Tighten the flaring nuts with your hands.

Tighten the flaring nuts with torque wrench until you hear a “click”.

Bend of fitting pipe shall not be too low; otherwise the fitting pipe might crack. Please use pipe bender when bending the fitting pipe.

When connecting outdoor and indoor unit, never pull the big and small joint of indoor unit with force, so as to prevent the tubes of indoor unit from cracking and causing leakage.

Connecting pipe shall be supported by a rack without transmitting its weight to other units.



(2) Installation of Protective Layer on Connection Pipe

To avoid condensate dew or water leakage on connecting pipe, the air pipe and liquid pipe must be wrapped with heat preservation material and adhesive pipe for insulation from the air.

The joints on indoor unit and outdoor unit must be wrapped with heat preservation materials and have no clearance against the wall surface of indoor unit and outdoor unit.

Wrap the pipe with tapes.

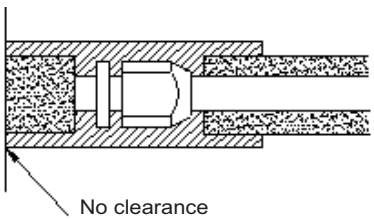
1) Use the adhesive tape to wrap the connecting pipe and cable into one bundle. To prevent condensate water from overflowing out of the drainpipe, the drainpipe shall be separated from connecting pipe and cable.

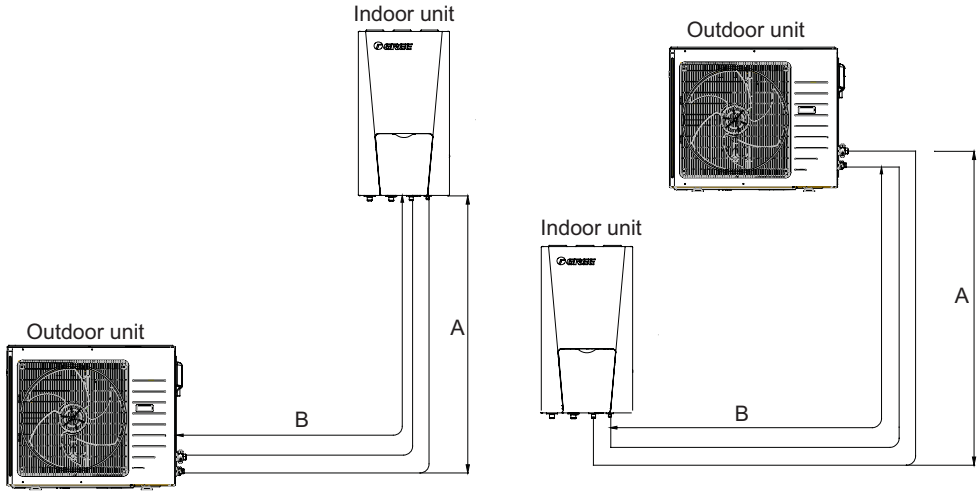
2) Wrap the heat preservation tape so that each ring of tape shall press half of the previous ring.

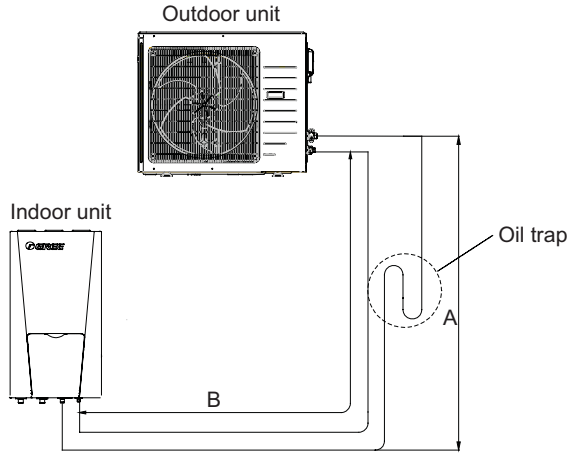
3) Fix the wrapped pipe onto the wall with pipe clamp.

4) Do not wrap the protective tape too tightly, as this will decrease the heat insulation performance.

5) After completing the protection work and wrapping the pipe properly, close the wall holes with sealing materials.







model	Pipe size (Diameter:Φ)		Length B		Elevation A		Additional refrigerant
	gas	Liquid	Standard	Max.	Standard	Max.	
GRS-CQ6.0Pd/Na-K	1/2"	1/4"	5.0m	20m	0m	10m	20g/m
GRS-CQ8.0Pd/Na-K	5/8"	3/8"	7.5m	30m	0m	15m	50g/m
GRS-CQ10Pd/Na-K	5/8"	3/8"	7.5m	30m	0m	15m	50g/m
GRS-CQ12Pd/Na-K	5/8"	3/8"	7.5m	30m	0m	15m	50g/m
GRS-CQ14Pd/Na-K	5/8"	3/8"	7.5m	30m	0m	15m	50g/m
GRS-CQ16Pd/Na-K	5/8"	3/8"	7.5m	30m	0m	15m	50g/m
GRS-CQ12Pd/Na-M	5/8"	3/8"	7.5m	30m	0m	15m	50g/m
GRS-CQ14Pd/Na-M	5/8"	3/8"	7.5m	30m	0m	15m	50g/m
GRS-CQ16Pd/Na-M	5/8"	3/8"	7.5m	30m	0m	15m	50g/m
GRS-CQ16Pd/Na-H	5/8"	3/8"	7.5m	30m	0m	15m	50g/m

Note:

① . No additional charge of the refrigerant is need when the pipe length is less than 10 m, if the pipe length is longer than 10m,additional charge of the refrigerant is needed according to the table.

Example:

If 16kw model is installed at a distance of 25m, (25-10)*50=750g refrigerant should be added;

② . Rated capacity is based on standard pipe length and maximum allowable length is base on the product reliability in the operation;

③ . Oil trap should be installed every 5-7 meters when the location of outdoor unit is higher than indoor unit.

2 ELECTRIC WIRING WORK

2.1 Wiring Principle

(1) General principles

Wires, equipment and connectors supplied for use on the site must be in compliance with provisions of regulations and engineering requirements.

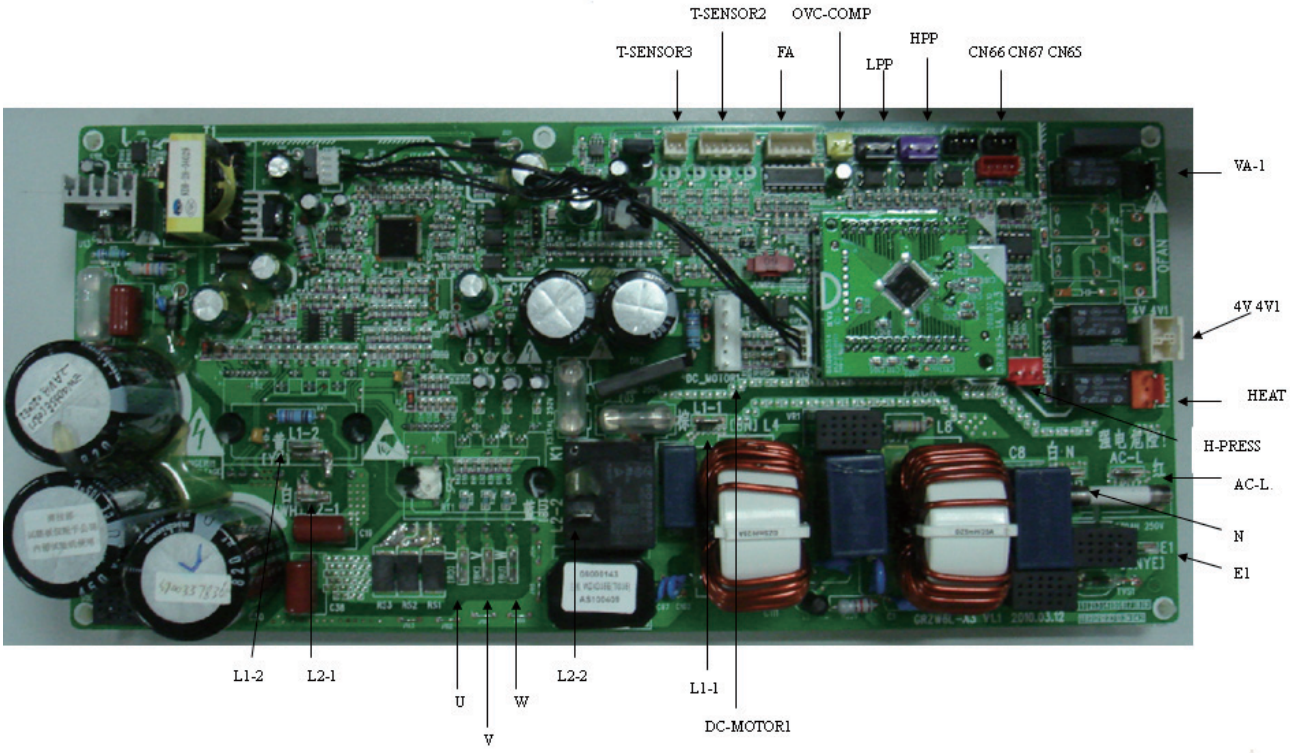
- Only electricians holding qualification are allowed to perform wire connection on the site.
- Before connection work is started, the power supply must be shut off.
- Installer shall be responsible for any damage due to incorrect connection of the external circuit of the unit.
- Caution --- MUST use copper wires.

(2) Connection of power cable to the electric cabinet of the unit

- Power cables should be laid out through cabling trough, conduit tube or cable channel.
- Power cables to be connected into the electric cabinet must be protected with rubber or plastic to prevent scratch by edge of metal plate.
- Power cables close to the electric cabinet of the unit must be fixed reliably to make the power terminal in the cabinet free from an external force.
- Power cable must be grounded reliably.

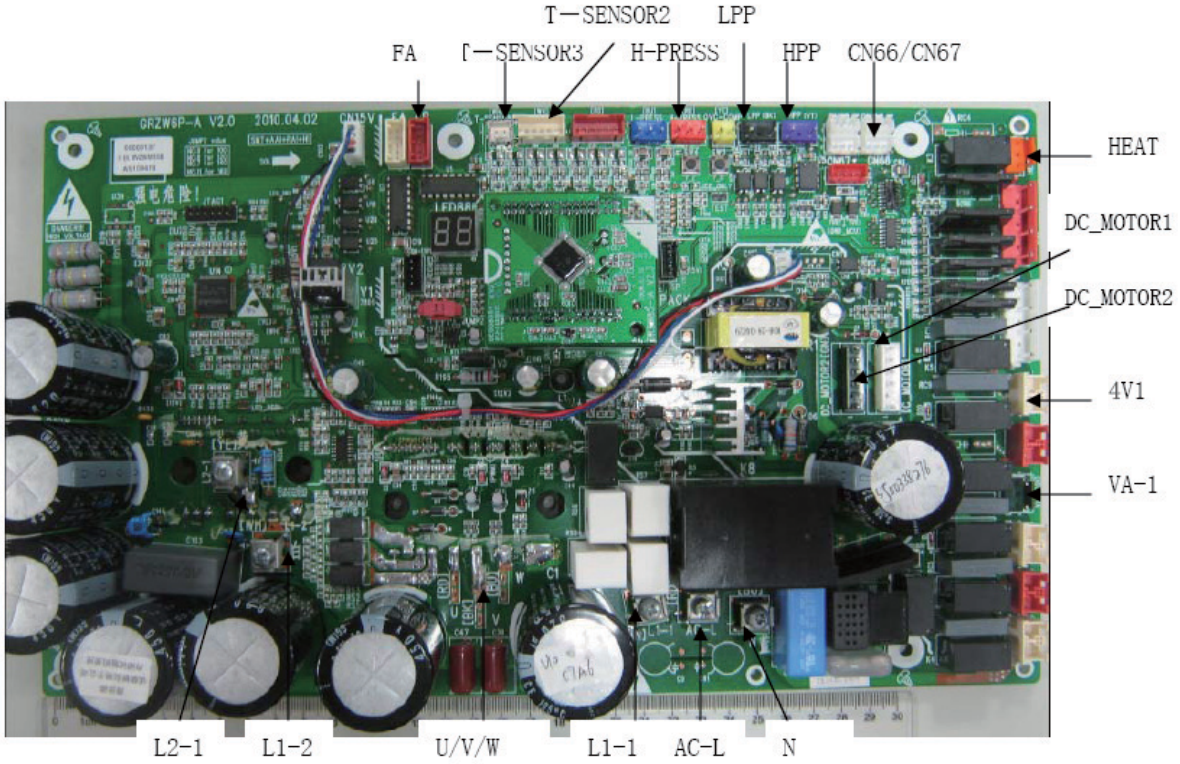
2.2 PCB Outline

(1) GRS-CQ6.0Pd/Na-K(O), GRS-CQ8.0Pd/Na-K(O), GRS-CQ10Pd/Na-K(O):



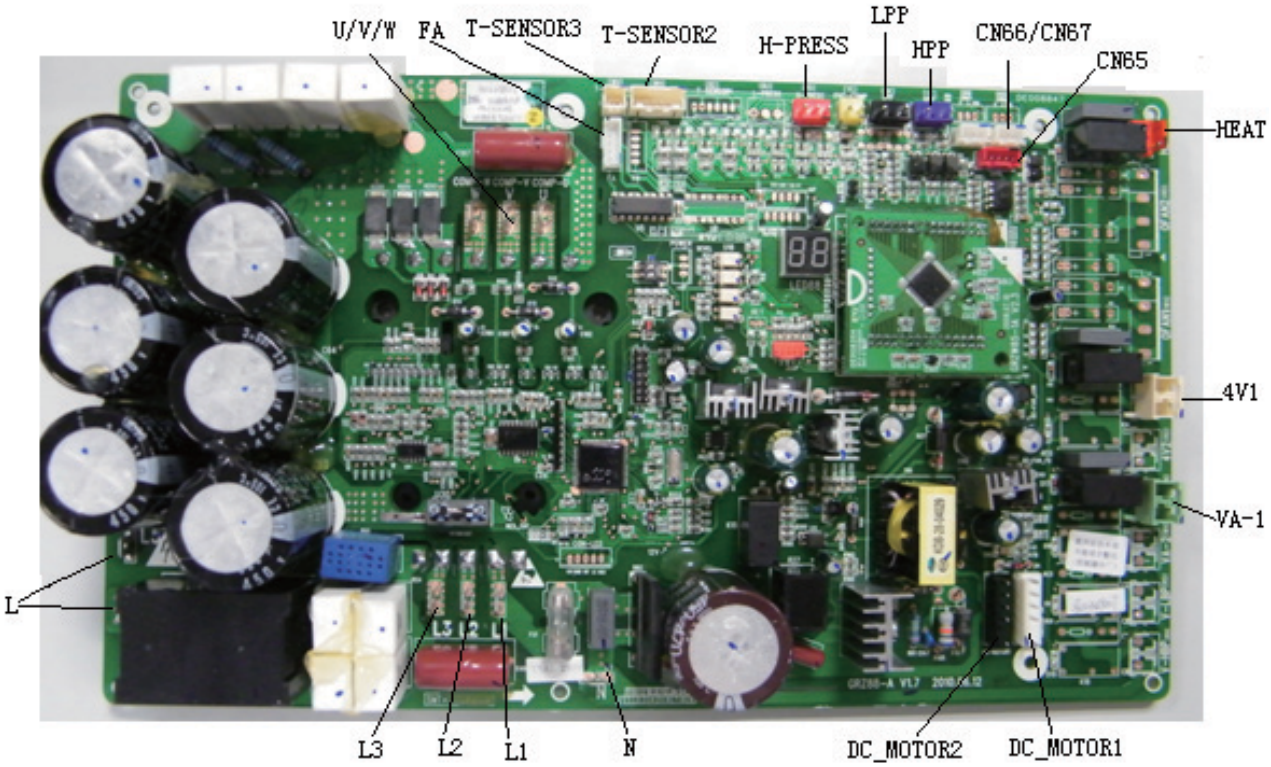
Silk Screen	Specification
AC-L	Live wire input of power supply, red
N	Neutral wire input of power supply, white
E1	Ground wire, yellow green
L2-2	PFC blue inductive wire
L1-1	PFC brown inductive wire
L2-1	PFC yellow inductive wire
L1-2	PFC white inductive wire
U	U-phase of compressor
V	V-phase of compressor
W	W-phase of compressor
DC_MOTOR1	DC fan 1 pin: strong power supply; 3 pin: fan GND; 4 pin: +15V; 5 pin: control signal; 6 pin:feedback signal;
4V 4V1	4-way valve
HEAT	Electric heating tape
VA-1	E-heater of chassis
HPP	High pressure switch
LPP	Low pressure switch
OVC-COMP	Overload protection of compressor
T-SENSOR2	1, 2 hole: pipe temperature; 3, 4 hole: environment; 5, 6 hole: exhaust
T-SENSOR3	1 hole: +3.3V 2 hole: detection ; suction temperature sensor
CN66.CN67	Communication cable 2 pin B, 3pinA
CN65	Communication cable: 1 pin earthed, 2 pin B, 3 pin A, 4 pin+12power supply; It can not be used for communication between outdoor unit and indoor unit;
FA	Pipe electric expansion valve 1-4 pin: driving impulse output; 5 pin: +12V;
H-PRESS	Signal input of pressure sensor 1 pin: GND; 2 pin: signal input; 3 pin: +5V;

(2) GRS-CQ12Pd/Na-K(O), GRS-CQ14Pd/Na-K(O), GRS-CQ16Pd/Na-K(O):



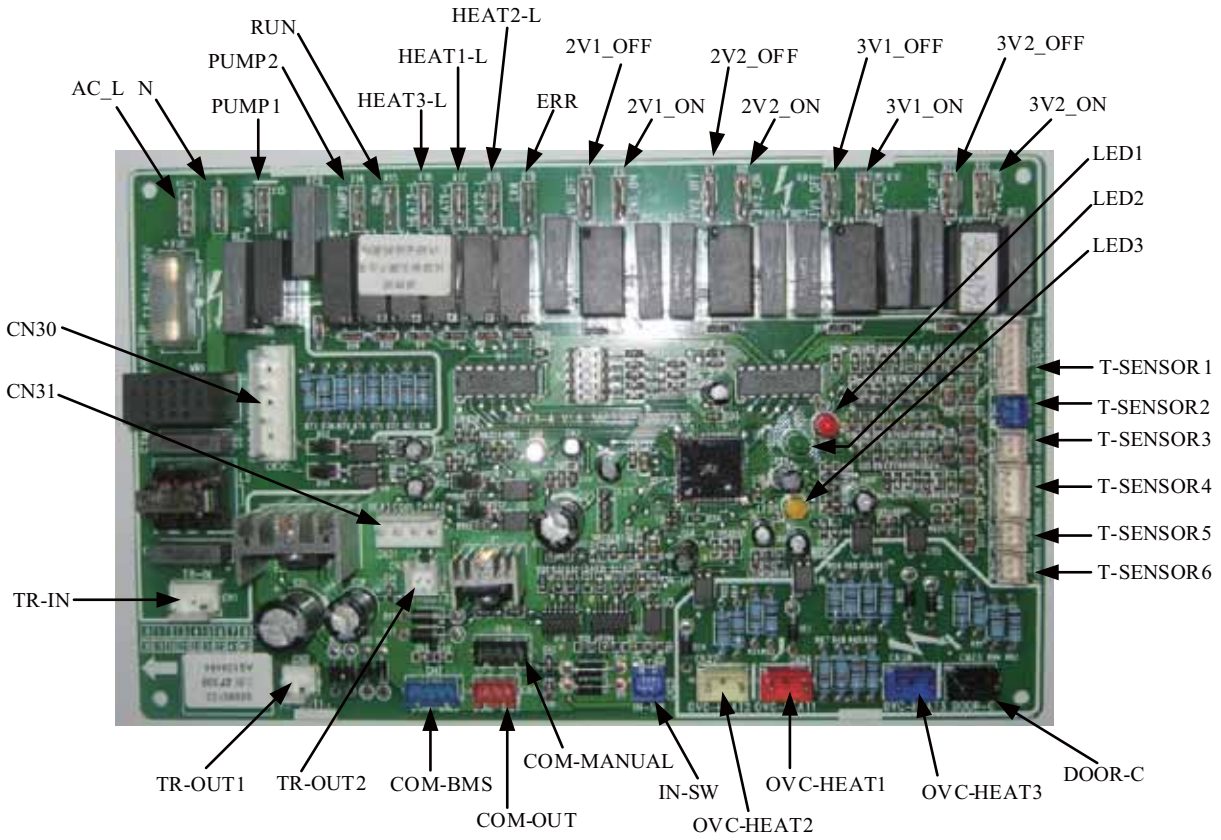
Silk Screen	Specification
AC-L	Live wire input of power supply, red
N	Neutral line input of power supply(PFC blue inductive wire) blue
L1-1	PFC brown inductive wire
L2-1	PFC yellow inductive wire
L1-2	PFC white inductive wire
U	U-phase of compressor
V	V-phase of compressor
W	W-phase of compressor
DC_MOTOR1	DC fan 1 pin: strong power supply; 3 pin: fan GND; 4 pin: +15V; 5 pin: control signal; 6 pin: feedback signal;
DC_MOTOR2	DC fan 1 pin: strong power supply; 3 pin: fan GND; 4 pin: +15V; 5 pin: control signal; 6 pin: feedback signal;
4V1	4-way valve
HEAT	Electric heating tape
VA-1	E-heater of chassis
HPP	High pressure switch
LPP	Low pressure switch
T-SENSOR2	1, 2hole: pipe temperature; 3, 4hole: environment; 5, 6hole: exhaust
T-SENSOR3	1 hole:+3.3V 2 hole: detection: suction temperature sensor
CN66.CN67	Communication cable 2 pin B, 3 pin A
CN65	Communication cable 1 pin earthed, 2 pin B, 3 pin A, 4 pin+12 power supply It can not be used for communication between outdoor unit and indoor unit.
FA	Pipe electric expansion valve 1-4 pin: driving impulse output; 5 pin: +12V;
H-PRESS	Signal input of pressure sensor 1 pin: GND; 2 pin: signal input; 3 pin: +5V;

(3) GRS-CQ12Pd/Na-M(O), GRS-CQ14Pd/Na-M(O), GRS-CQ16Pd/Na-M(O),GRS-CQ16Pd/Na-H(O):



Silk Screen	Specification
L1	live wire input of power supply
L2	
L3	
N	Neutral line input of power supply
L	Reactor red inductive wire
U	U-phase of compressor
V	V-phase of compressor
W	W-phase of compressor
DC_MOTOR1	DC fan 1 pin: strong power supply; 3 pin: fan GND; 4 pin: +15V; 5 pin: control signal; 6 pin: feedback signal;
DC_MOTOR2	DC fan 1 pin: strong power supply; 3 pin: fan GND; 4 pin: +15V; 5 pin: control signal; 6 pin: feedback signal;
4V1	4-way valve
HEAT	electric heating tape
VA-1	e-heater of chassis
HPP	high pressure switch
LPP	low pressure switch
T-SENSOR2	1, 2hole: pipe temperature; 3, 4hole: environment; 5, 6hole: exhaust
T-SENSOR3	1 hole:+3.3V; 2 hole: detection: suction temperature sensor
CN66, CN67	communication cable 2 pin B, 3 pin A
CN65	communication cable 1 pin earthed, 2 pin B, 3 pin A, 4 pin+12 power supply It can not be used for communication between outdoor unit and indoor unit.
FA	pipe electric expansion valve 1-4 pin: driving impulse output; 5 pin: +12V;
H-PRESS	signal input of pressure sensor 1 pin: GND; 2 pin: signal input; 3 pin: +5V;

(4) GRS-CQ6.0Pd/Na-K(I), GRS-CQ8.0Pd/Na-K(I), GRS-CQ10Pd/Na-K(I), GRS-CQ12Pd/Na-K(I), GRS-CQ14Pd/Na-K(I), GRS-CQ16Pd/Na-K(I), GRS-CQ12Pd/Na-M(I), GRS-CQ14Pd/Na-M(I), GRS-CQ16Pd/Na-M(I),GRS-CQ16Pd/Na-H(I):



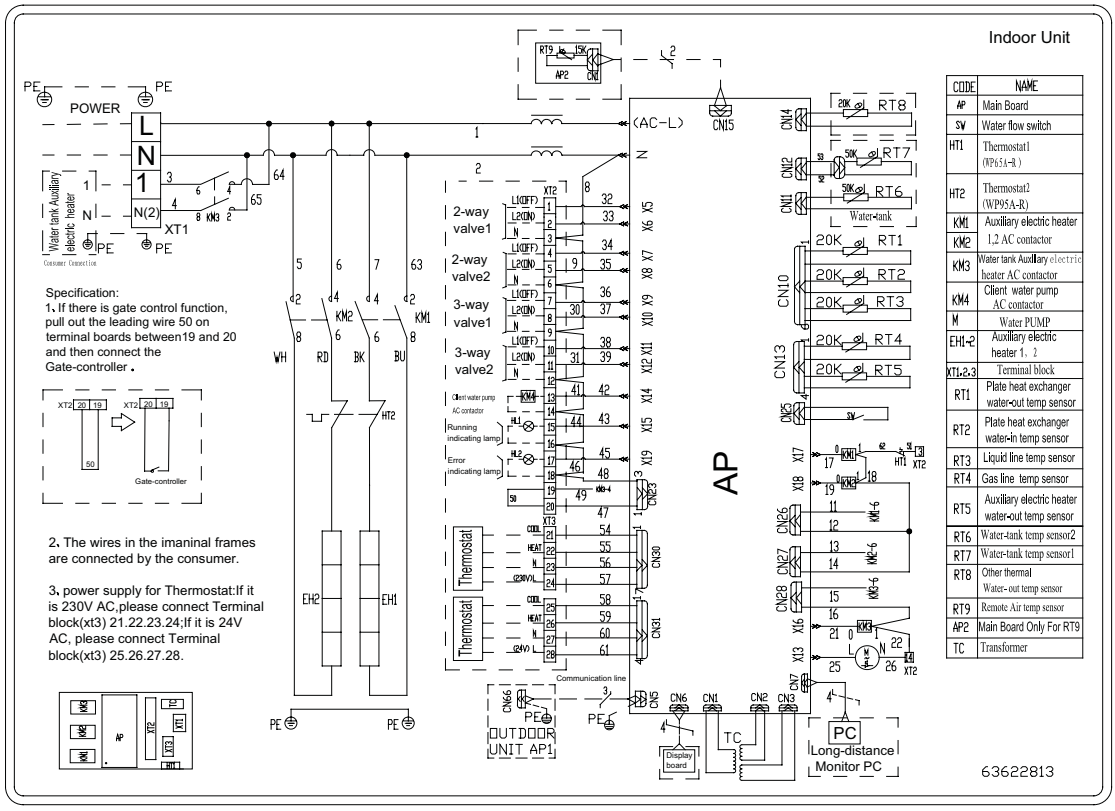
Silk Screen	Location	Specification
AC-L	-	live wire of power supply
N	-	Neutral wire of power supply
PUMP1	X13	live wire of indoor water pump
PUMP2	X14	live wire of solar water pump
RUN	X15	running indicator
HEAT3-L	X16	e-heater of water tank
HEAT1-L	X17	e-heater of indoor unit 1
HEAT2-L	X18	e-heater of indoor unit 2
ERR	X19	error indicator
2V1_OFF	X5	Electric magnetic 2-way valve1 is normally closed.
2V1_ON	X6	Electric magnetic 2-way valve1 is normally open.
2V2_OFF	X7	Electric magnetic 2-way valve2 is normally closed.
2V2_ON	X8	Electric magnetic 2-way valve2 is normally open.
3V1_OFF	X9	Electric magnetic 3-way valve1 is normally closed.
3V1_ON	X10	Electric magnetic 3-way valve1 is normally open.
3V2_OFF	X11	Electric magnetic 3-way valve2 is normally closed.
3V2_ON	X12	Electric magnetic 3-way valve2 is normally open.
T-SENSOR1	CN10	terminal of temperature sensor1

T-SENSOR2	CN11	terminal of temperature sensor2
T-SENSOR3	CN12	terminal of temperature sensor3
T-SENSOR4	CN13	terminal of temperature sensor4
T-SENSOR5	CN14	terminal of temperature sensor5
T-SENSOR6	CN15	terminal of temperature sensor6
DOOR-C	CN23	Door detection input
OVC-HEAT3	CN28	e-heater of water tank adhesion-proof protection detector
OVC-HEAT1	CN26	e-heater of indoor unit1 adhesion-proof protection detector
OVC-HEAT2	CN27	e-heater of indoor unit2 adhesion-proof protection detector
IN-SW	CN25	detection input of water flow switch
COM-MANUAL	CN6	connect the wired controller
COM-OUT	CN5	connect to outdoor unit
COM-BMS	CN7	Building Management System (BMS)
TR-OUT1	CN2	transformer output 1
TR-OUT2	CN3	transformer output 2
TR-IN	CN1	220V in put of transformer
CN30	CN30	heavy-current interface of end controller
CN31	CN31	heavy-current interface of end controller

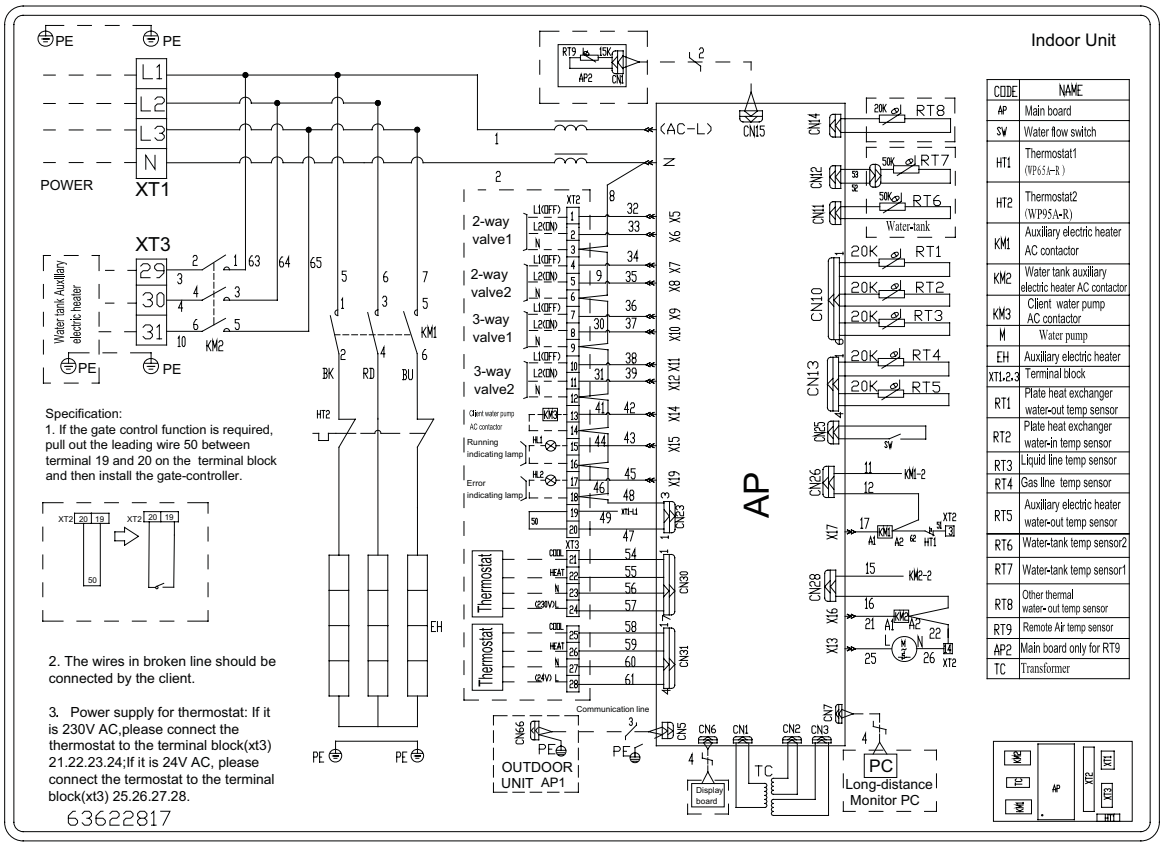
2.3 Electric Wiring Design

2.3.1 Wiring Diagram: Indoor Unit

GRS-CQ6.0Pd/Na-K(I),GRS-CQ8.0Pd/Na-K(I),GRS-CQ10Pd/Na-K(I),GRS-CQ12Pd/Na-K(I) ,GRS-CQ14Pd/Na-K(I),GRS-CQ16Pd/Na-K(I):

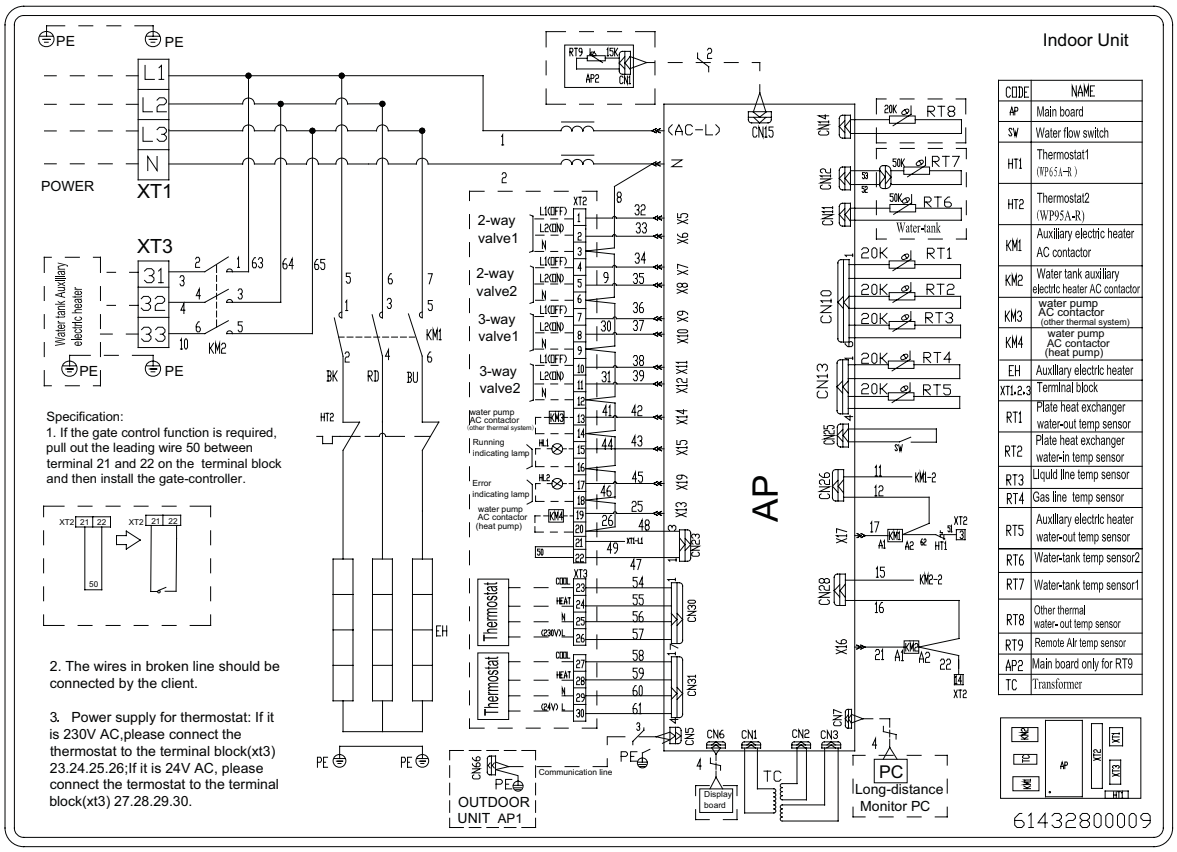

Indoor Unit
POWER
Specification:
1、If there is gate control function, pull out the leading wire 50 on terminal boards between19 and 20 and then connect the Gate-controller .
2、The wires in the imaninal frames are connected by the consumer.
3、power supply for Thermostat:If it is 230V AC,please connect Terminal block(xt3) 21.22.23.24;If it is 24V AC, please connect Terminal block(xt3) 25.26.27.28.
2-way valve1
2-way valve2
3-way valve1
3-way valve2
Running indicating lamp
Error indicating lamp
Thermostat
Communication line
OUTDOOR UNIT AP1
Display board
TC
PC
Long-distance Monitor PC
AP
CODE NAME
AP Main Board
SV Water flow switch
HT1 Thermostat1 (WP65A-R)
HT2 Thermostat2 (WP95A-R)
KM1 Auxiliary electric heater
KM2 1,2 AC contactor
KM3 Water tank Auxiliary electric heater AC contactor
KM4 Client water pump AC contactor
M Water PUMP
EH1-2 Auxiliary electric heater 1、2
XT1-2-3 Terminal block
RT1 Plate heat exchanger water-out temp sensor
RT2 Plate heat exchanger water-in temp sensor
RT3 Liquid line temp sensor
RT4 Gas line temp sensor
RT5 Auxiliary electric heater water-out temp sensor
RT6 Water-tank temp sensor2
RT7 Water-tank temp sensor1
RT8 Other thermal Water-out temp sensor
RT9 Remote Air temp sensor
AP2 Main Board Only For RT9
TC Transformer
63622813

GRS-CQ12Pd/Na-M(I), GRS-CQ14Pd/Na-M(I), GRS-CQ16Pd/Na-M(I):


Indoor Unit
POWER
XT1
XT3
Water tank Auxiliary electric heater
2-way valve1
2-way valve2
3-way valve1
3-way valve2
Client water pump AC contactor
Running indicating lamp
Error indicating lamp
Thermostat
Thermostat
EH
AP
(AC-L)
Water-tank
Communication line
OUTDOOR UNIT AP1
Display board
TC
PC
Long-distance Monitor PC
Specification:
1. If the gate control function is required, pull out the leading wire 50 between terminal 19 and 20 on the terminal block and then install the gate-controller.
2. The wires in broken line should be connected by the client.
3. Power supply for thermostat: If it is 230V AC,please connect the thermostat to the terminal block(xt3) 21.22.23.24;If it is 24V AC, please connect the termostat to the terminal block(xt3) 25.26.27.28.
63622817

CODE	NAME
AP	Main board
SW	Water flow switch
HT1	Thermostat1 (WP65A-R)
HT2	Thermostat2 (WP95A-R)
KM1	Auxiliary electric heater AC contactor
KM2	Water tank auxiliary electric heater AC contactor
KM3	Client water pump AC contactor
M	Water pump
EH	Auxiliary electric heater
XT1.2.3	Terminal block
RT1	Plate heat exchanger water-out temp sensor
RT2	Plate heat exchanger water-in temp sensor
RT3	Liquid line temp sensor
RT4	Gas line temp sensor
RT5	Auxiliary electric heater water-out temp sensor
RT6	Water-tank temp sensor2
RT7	Water-tank temp sensor1
RT8	Other thermal water- out temp sensor
RT9	Remote Air temp sensor
AP2	Main board only for RT9
TC	Transformer

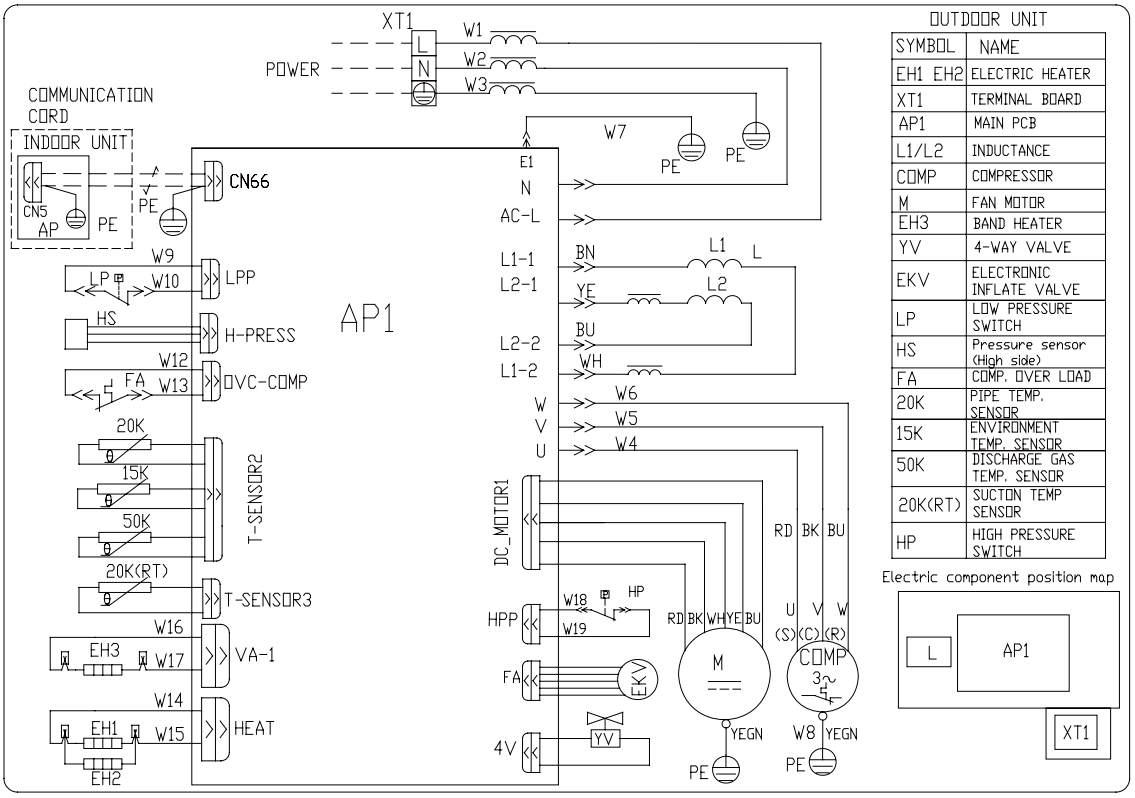
GRS-CQ16Pd/Na-H(I)


Indoor Unit
POWER
XT1
XT3
Water tank Auxiliary electric heater
2-way valve1
2-way valve2
3-way valve1
3-way valve2
water pump AC contactor (other thermal system)
Running indicating lamp
Error indicating lamp
water pump AC contactor (heat pump)
Thermostat
Thermostat
EH
AP
(AC-L)
Water-tank
Communication line
OUTDOOR UNIT AP1
Display board
TC
PC
Long-distance Monitor PC
Specification:
1. If the gate control function is required, pull out the leading wire 50 between terminal 21 and 22 on the terminal block and then install the gate-controller.
2. The wires in broken line should be connected by the client.
3. Power supply for thermostat: If it is 230V AC,please connect the thermostat to the terminal block(xt3) 23.24.25.26;If it is 24V AC, please connect the termostat to the terminal block(xt3) 27.28.29.30.
61432800009

CODE	NAME
AP	Main board
SW	Water flow switch
HT1	Thermostat1 (WP65A-R)
HT2	Thermostat2 (WP95A-R)
KM1	Auxiliary electric heater AC contactor
KM2	Water tank auxiliary electric heater AC contactor
KM3	water pump AC contactor (other thermal system)
KM4	water pump AC contactor (heat pump)
EH	Auxiliary electric heater
XT1.2.3	Terminal block
RT1	Plate heat exchanger water-out temp sensor
RT2	Plate heat exchanger water-in temp sensor
RT3	Liquid line temp sensor
RT4	Gas line temp sensor
RT5	Auxiliary electric heater water-out temp sensor
RT6	Water-tank temp sensor2
RT7	Water-tank temp sensor1
RT8	Other thermal water- out temp sensor
RT9	Remote Air temp sensor
AP2	Main board only for RT9
TC	Transformer

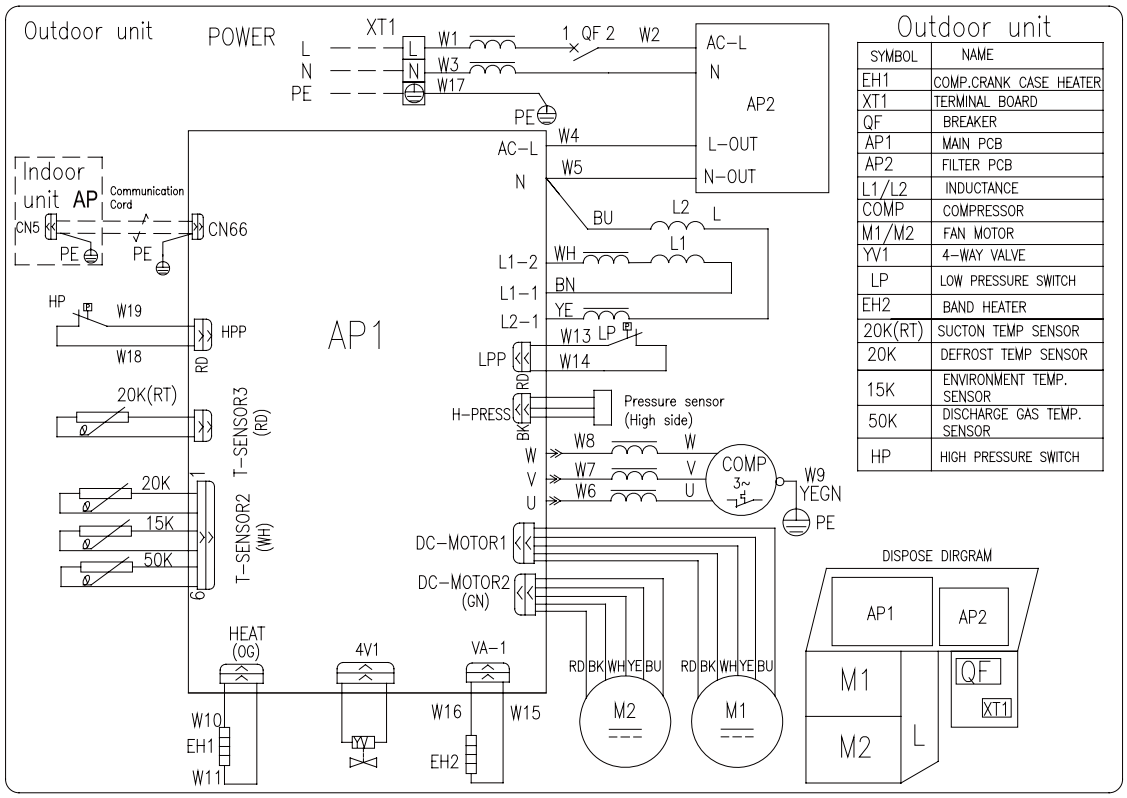
2.3.2 Wiring Diagram: Outdoor Unit

GRS-CQ6.0Pd/Na-K(O),GRS-CQ8.0Pd/Na-K(O),GRS-CQ10Pd/Na-K(O):



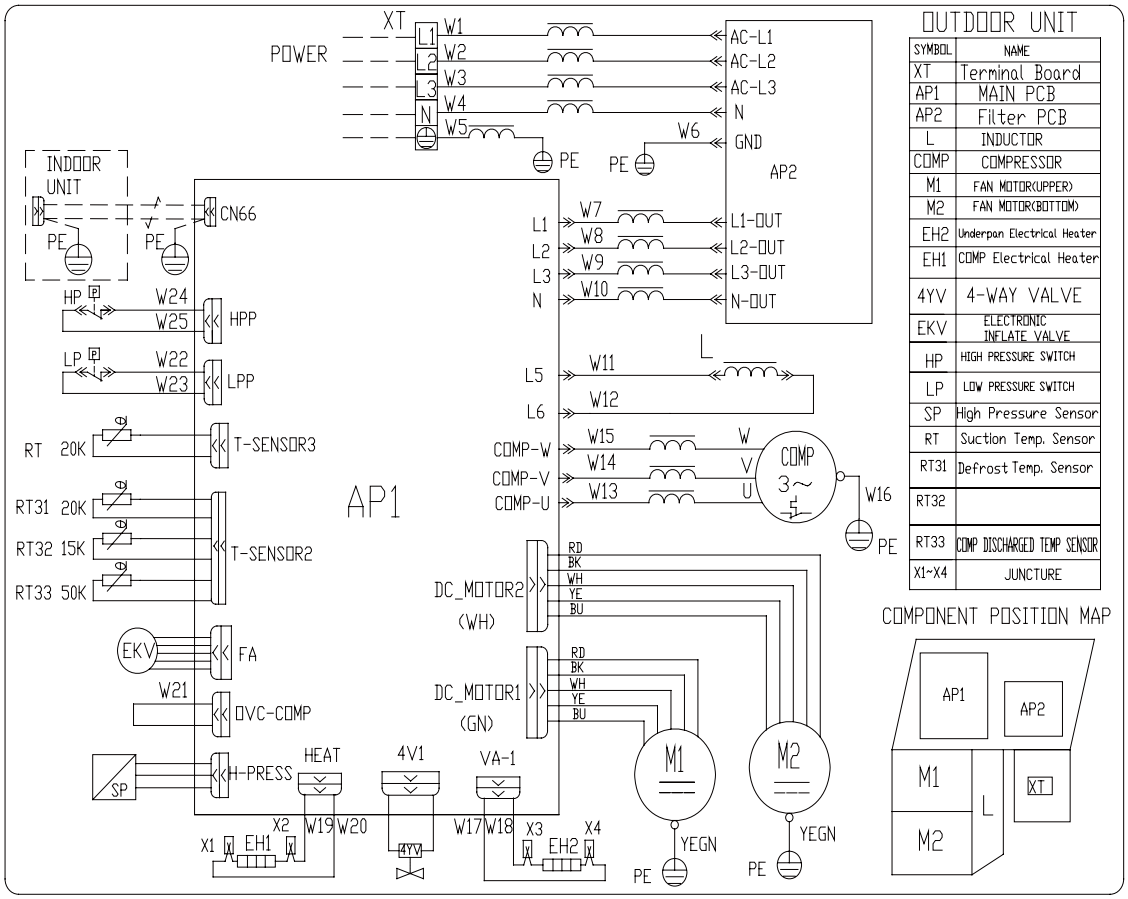
SYMBOL	NAME
EH1 EH2	ELECTRIC HEATER
XT1	TERMINAL BOARD
AP1	MAIN PCB
L1/L2	INDUCTANCE
COMP	COMPRESSOR
M	FAN MOTOR
EH3	BAND HEATER
YV	4-WAY VALVE
EKV	ELECTRONIC INFLATE VALVE
LP	LOW PRESSURE SWITCH
HS	Pressure sensor (High side)
FA	COMP. OVER LOAD
20K	PIPE TEMP. SENSOR
15K	ENVIRONMENT TEMP. SENSOR
50K	DISCHARGE GAS TEMP. SENSOR
20K(RT)	SUCTON TEMP SENSOR
HP	HIGH PRESSURE SWITCH

GRS-CQ12Pd/Na-K(O),GRS-CQ14Pd/Na-K(O),GRS-CQ16Pd/Na-K(O):



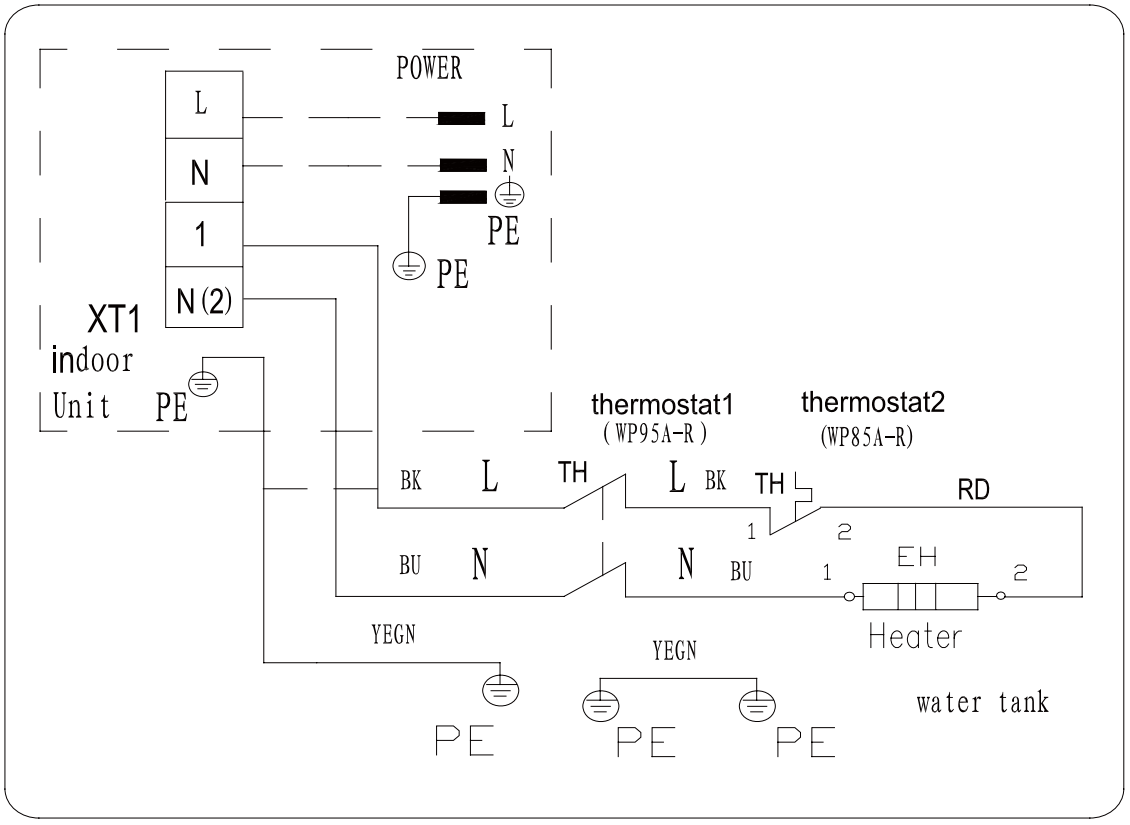
SYMBOL	NAME
EH1	COMP.CRANK CASE HEATER
XT1	TERMINAL BOARD
QF	BREAKER
AP1	MAIN PCB
AP2	FILTER PCB
L1/L2	INDUCTANCE
COMP	COMPRESSOR
M1/M2	FAN MOTOR
YV1	4-WAY VALVE
LP	LOW PRESSURE SWITCH
EH2	BAND HEATER
20K(RT)	SUCTON TEMP SENSOR
20K	DEFROST TEMP SENSOR
15K	ENVIRONMENT TEMP. SENSOR
50K	DISCHARGE GAS TEMP. SENSOR
HP	HIGH PRESSURE SWITCH

GRS-CQ12Pd/Na-M(O), GRS-CQ14Pd/Na-M(O), GRS-CQ16Pd/Na-M(O), GRS-CQ16Pd/Na-H(O):

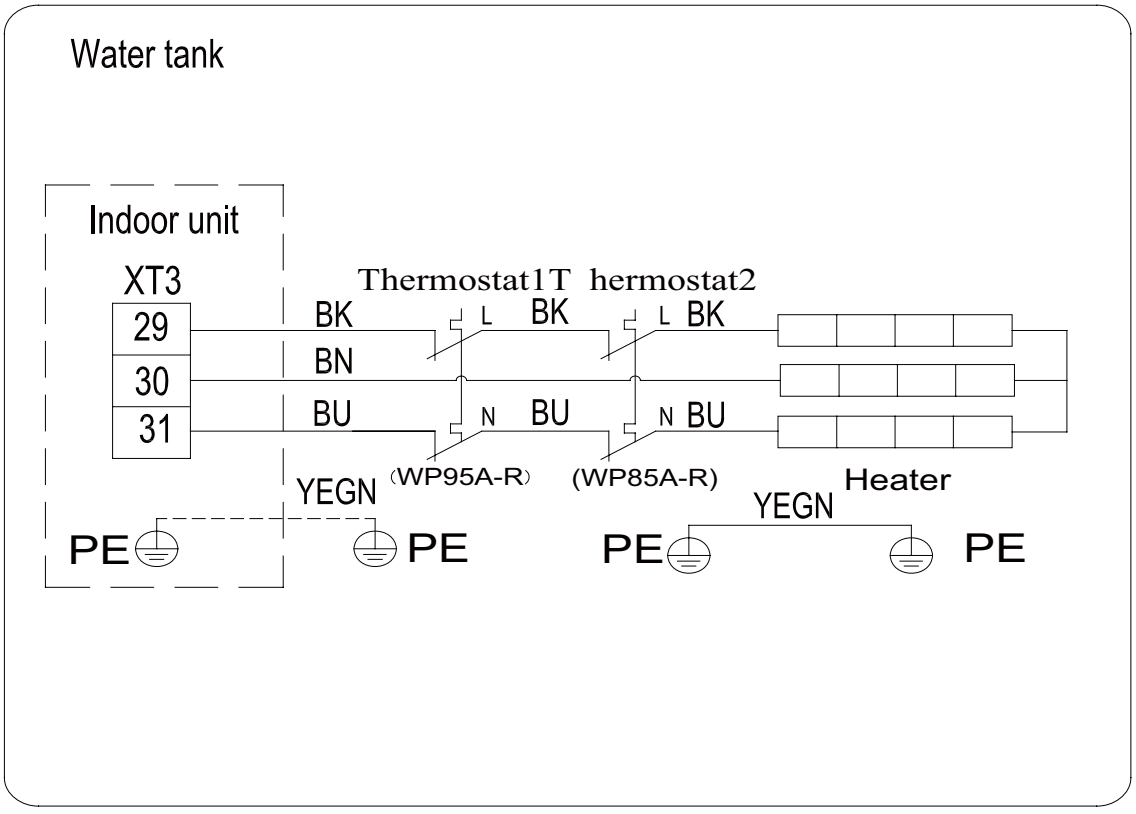


2.3.3 Wiring Diagram: Water Tank

SXVD200LCJ/A-K, SXVD200LCJ2/A-K, SXVD300LCJ/A-K, SXVD300LCJ2/A-K:

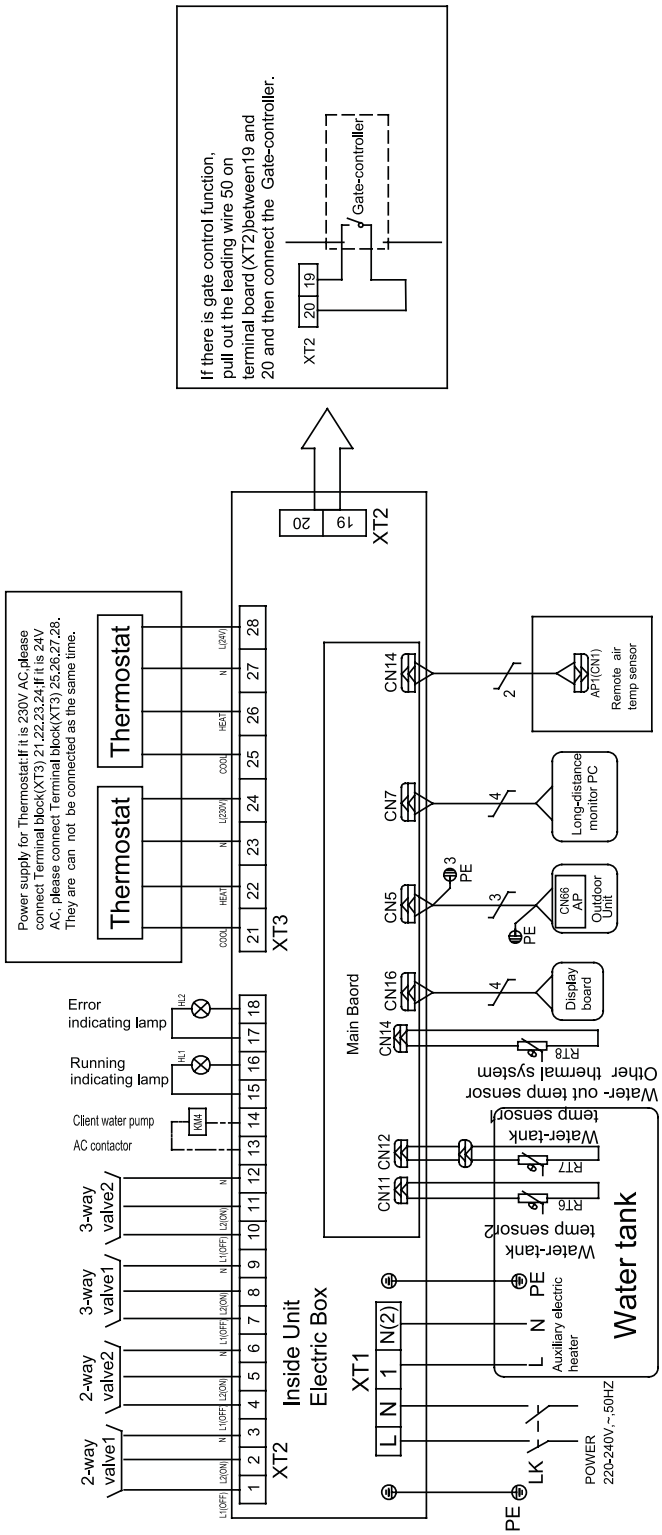


SXVD200LCJ/A-M, SXVD200LCJ2/A-M, SXVD300LCJ/A-M, SXVD300LCJ2/A-M,SXVD200LCJ/A-H, SXVD200LCJ2/A-H, SXVD300LCJ/A-H, SXVD300LCJ2/A-H:



2.3.4 Wiring Diagram: Indoor and Outdoor Unit (Including Field Wiring)

GRS-CQ6.0Pd/Na-K, GRS-CQ8.0Pd/Na-K, GRS-CQ10Pd/Na-K, GRS-CQ12Pd/Na-K, GRS-CQ14Pd/Na-K, GRS-CQ16Pd/Na-K:



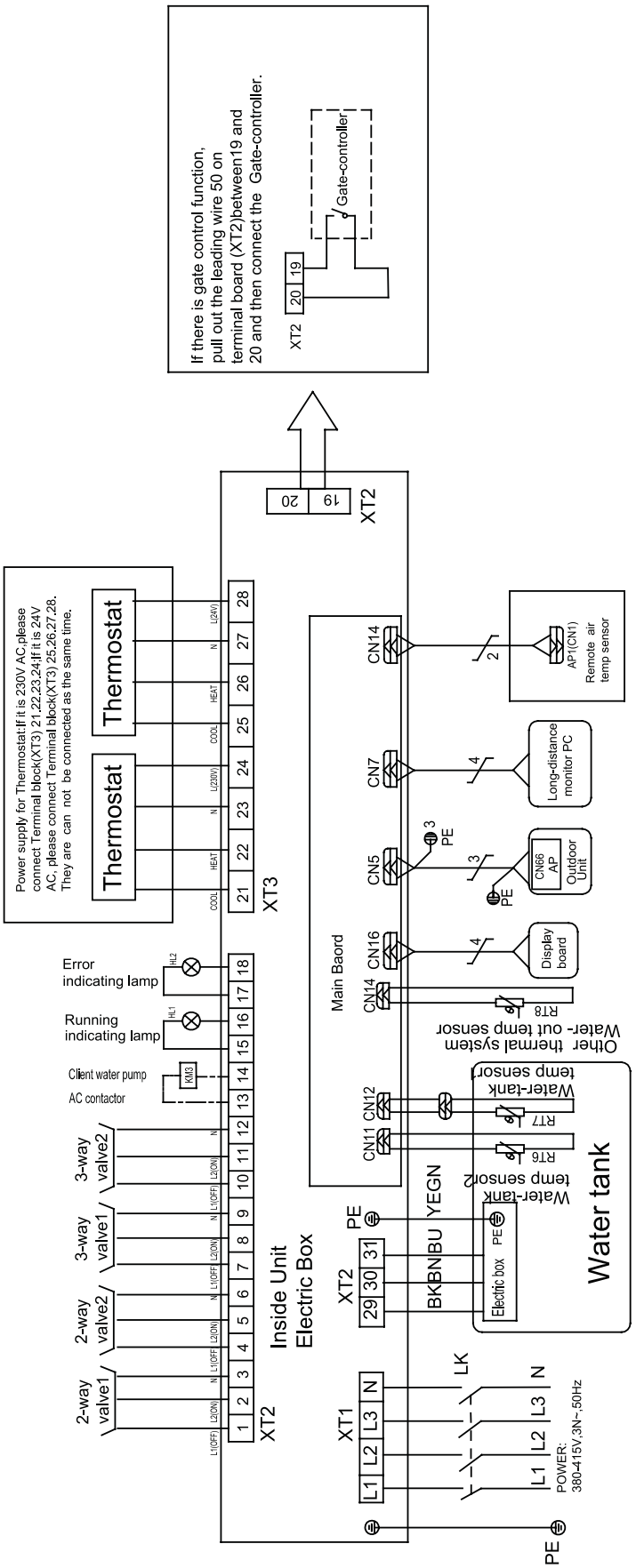
Specification:

1, Running indicating lamp(HL1) and Error indicating lamp (HL2) are connected or not on the basis of the clients'demand.

2, Client water pump AC contactor(KM4) is back-up Pump for the future , so it is not be connect;

3, Leakage Switch（LK） is necessary for additional installation, Please reference to **4.3 Electrical Data**

GRS-CQ12Pd/Na-M, GRS-CQ14Pd/Na-M, GRS-CQ16Pd/Na-M:

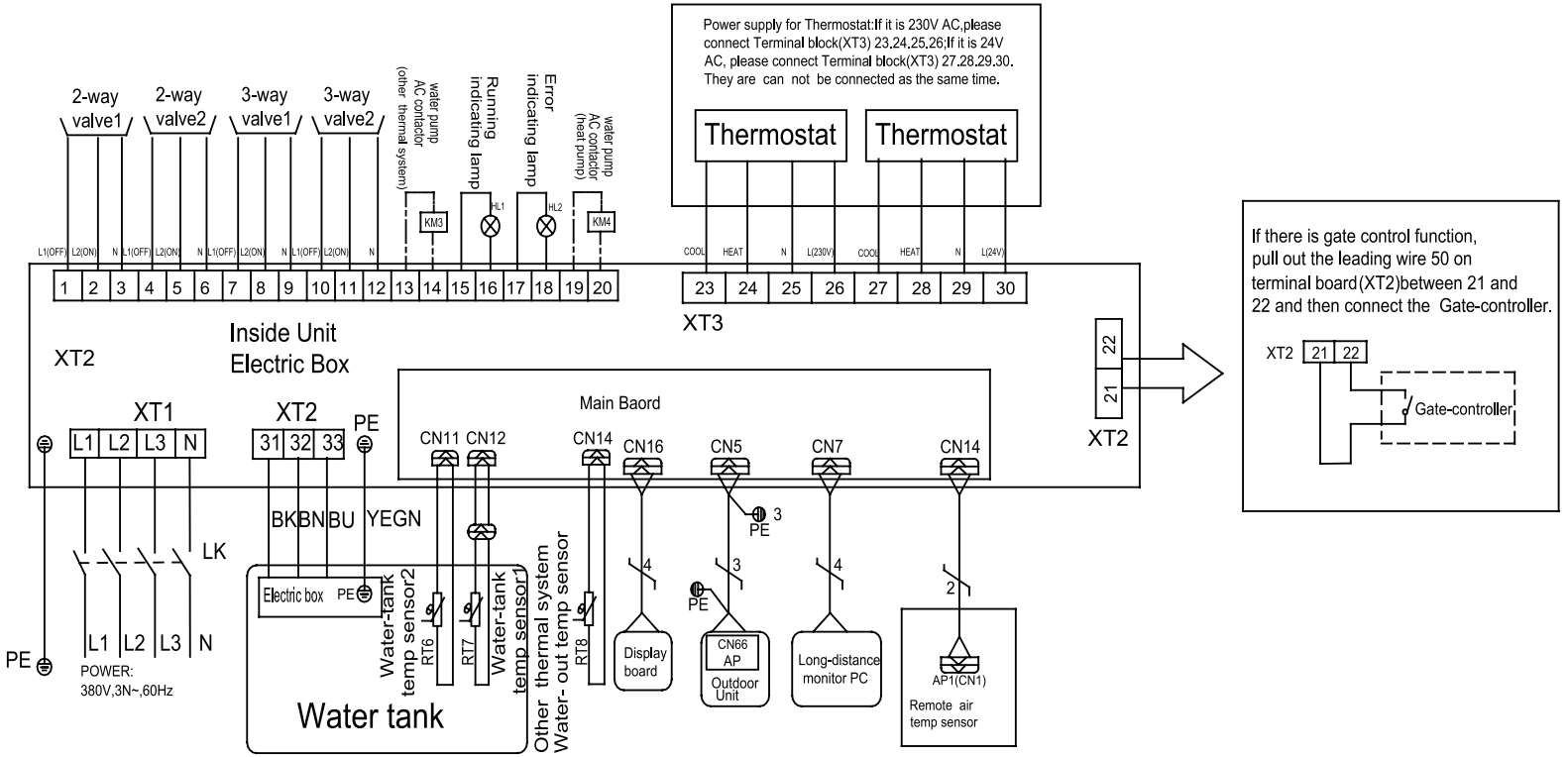


Specification:

1、Running indicating lamp(HL1) and Error indicating lamp (HL2) are connected or not on the basis of the clients'demand.

2、Client water pump AC contactor(KM3) is back-up Pump for the future , so it is not be connect;

3、Leakage Switch（LK） is necessary for additional installation, Please reference to **4.3 Electrical Data**


Power supply for Thermostat:If it is 230V AC,please connect Terminal block(XT3) 23.24.25.26;If it is 24V AC, please connect Terminal block(XT3) 27.28.29.30. They are can not be connected as the same time.
Thermostat
Thermostat
2-way valve1
2-way valve2
3-way valve1
3-way valve2
water pump AC contactor (other thermal system)
Running indicating lamp
Error indicating lamp
water pump AC contactor (heat pump)
KM3
KM4
HL1
HL2
L1(OFF) L2(ON) N
COOL HEAT N L(230V)
COOL HEAT N L(24V)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
23 24 25 26 27 28 29 30
XT3
XT2
Inside Unit Electric Box
XT1
L1 L2 L3 N
31 32 33
PE
Main Baord
CN11 CN12 CN14 CN16 CN5 CN7 CN14
BK BN BU YEGN
LK
Electric box PE
Water-tank temp sensor2 RT6
RT7
Water-tank temp sensor1 RT8
Other thermal system Water- out temp sensor
Water tank
Display board
CN66 AP Outdoor Unit
Long-distance monitor PC
AP1(CN1)
Remote air temp sensor
POWER: 380V,3N~,60Hz
22
21
If there is gate control function, pull out the leading wire 50 on terminal board(XT2)between 21 and 22 and then connect the Gate-controller.
XT2 21 22
Gate-controller

Specification:

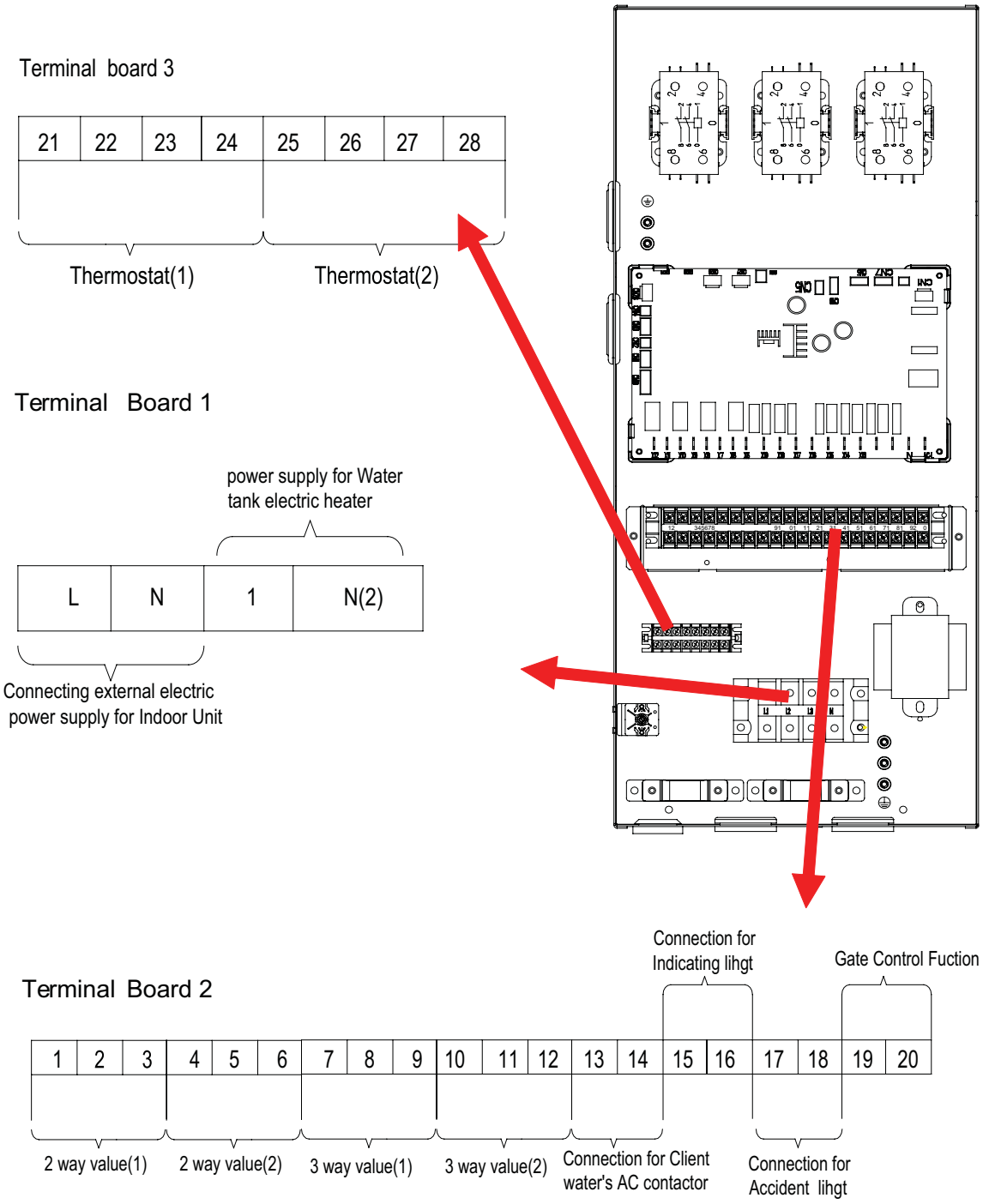
1、Running indicating lamp(HL1) and Error indicating lamp (HL2) are connected or not on the basis of the clients'demand.

2、water pump AC contactor(other thermal system)(KM4) is back-up Pump for the future , so it is not be connect;

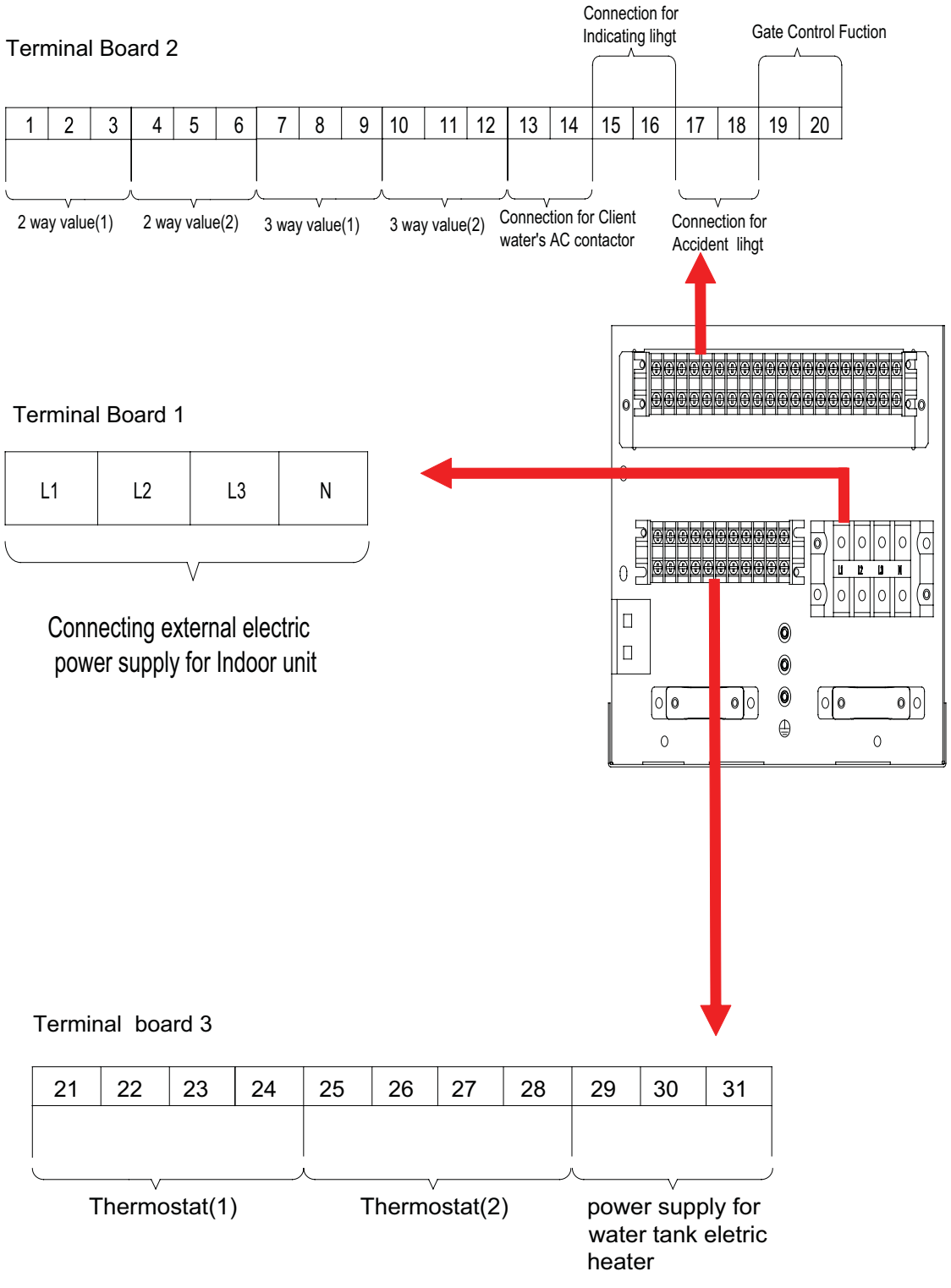
3、Leakage Switch（LK） is necessary for additional installation, Please reference to **4.3 Electrical Data**

2.3.5 Terminal Board Information

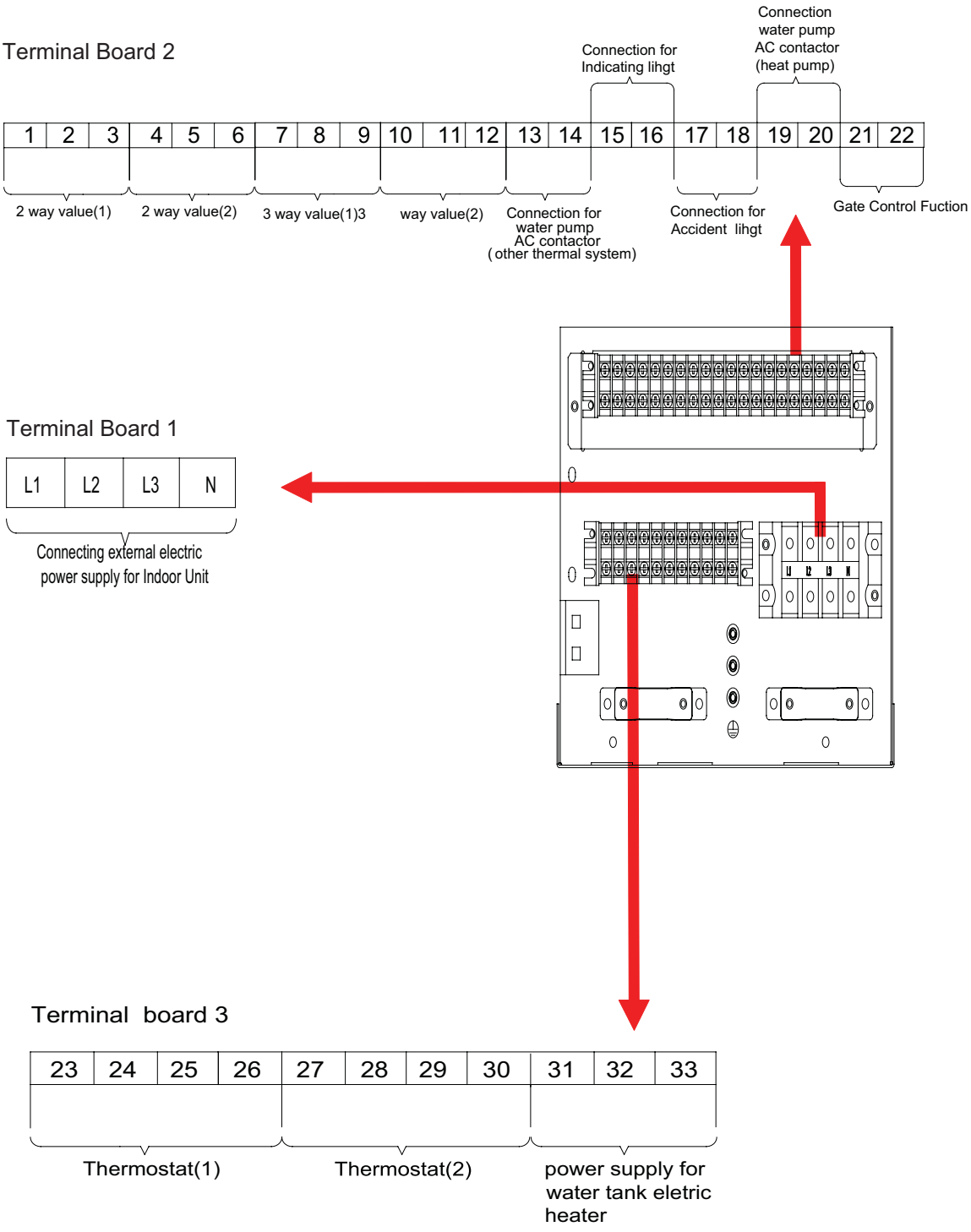
GRS-CQ6.0Pd/Na-K, GRS-CQ8.0Pd/Na-K, GRS-CQ10Pd/Na-K, GRS-CQ12Pd/Na-K, GRS-CQ14Pd/Na-K, GRS-CQ16Pd/Na-K:



GRS-CQ12Pd/Na-M, GRS-CQ14Pd/Na-M, GRS-CQ16Pd/Na-M:

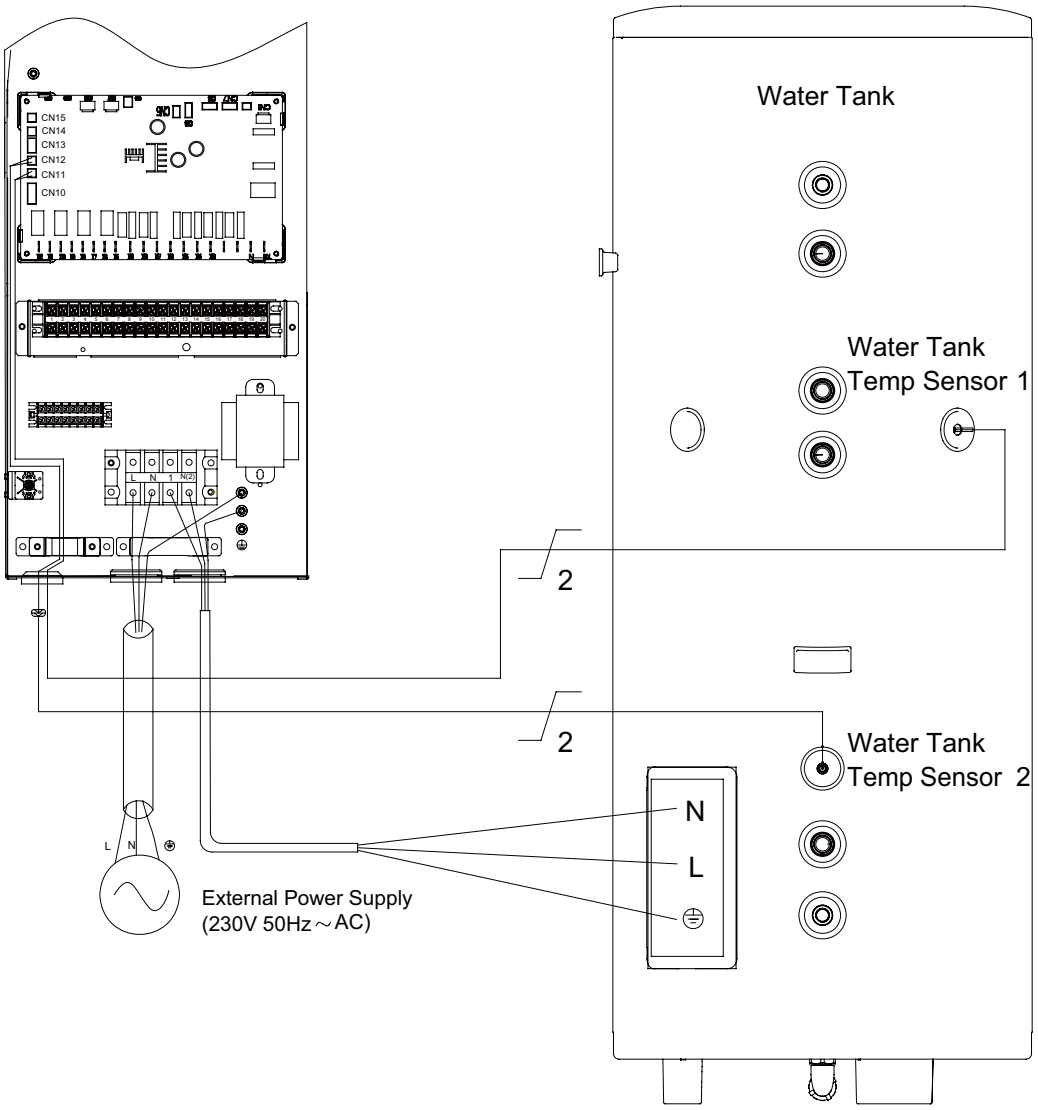

Terminal Board 2
Connection for Indicating lihgt
Gate Control Fuction
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
2 way value(1)
2 way value(2)
3 way value(1)
3 way value(2)
Connection for Client water's AC contactor
Connection for Accident lihgt
Terminal Board 1
L1 L2 L3 N
Connecting external electric power supply for Indoor unit
Terminal board 3
21 22 23 24 25 26 27 28 29 30 31
Thermostat(1)
Thermostat(2)
power supply for water tank eletric heater

GRS-CQ16Pd/Na-H:

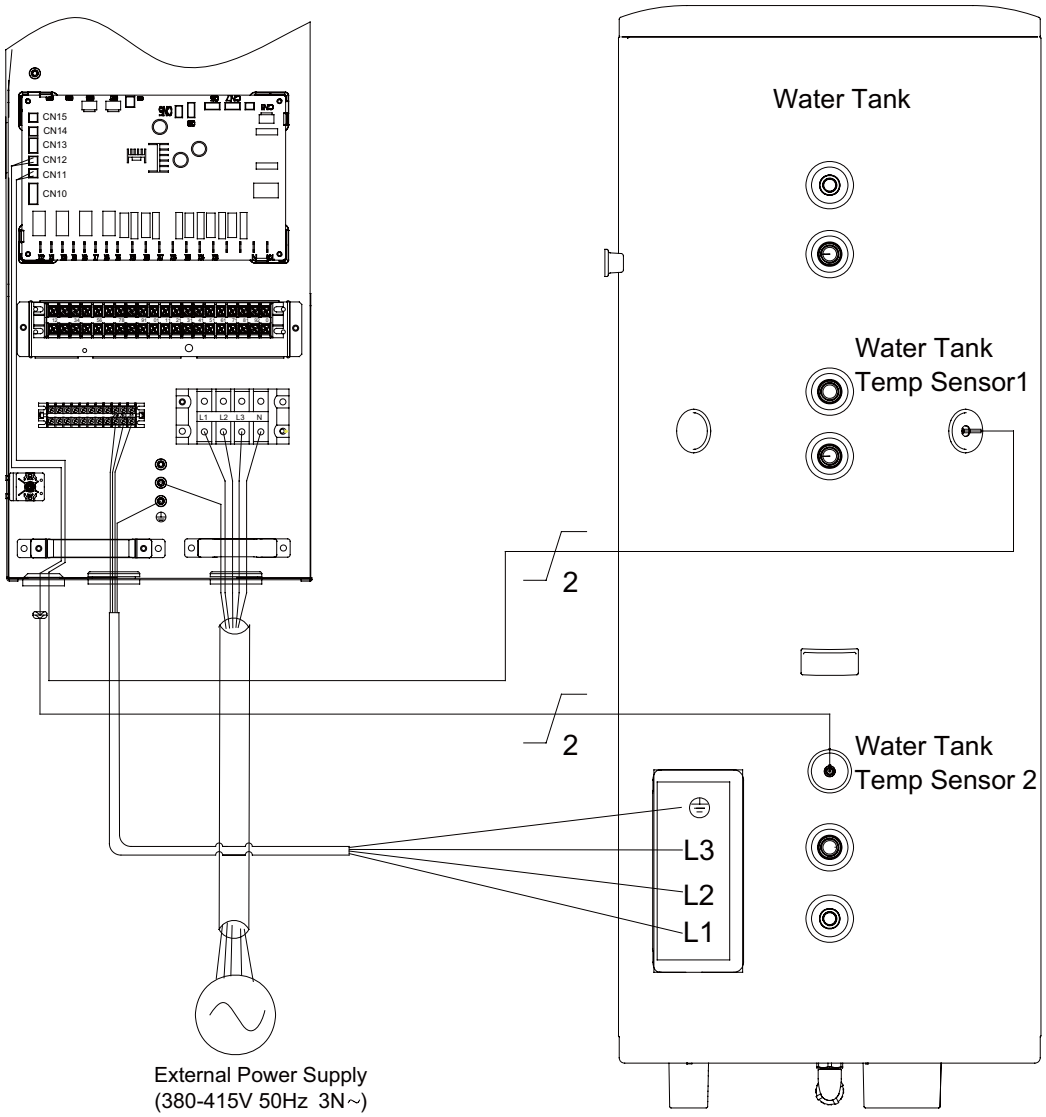

Terminal Board 2
Connection for Indicating lihgt
Connection water pump AC contactor (heat pump)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
2 way value(1)
2 way value(2)
3 way value(1)3
way value(2)
Connection for water pump AC contactor (other thermal system)
Connection for Accident lihgt
Gate Control Fuction
Terminal Board 1
L1 L2 L3 N
Connecting external electric power supply for Indoor Unit
Terminal board 3
23 24 25 26 27 28 29 30 31 32 33
Thermostat(1)
Thermostat(2)
power supply for water tank eletric heater

2.3.6 Connecting with External Electric

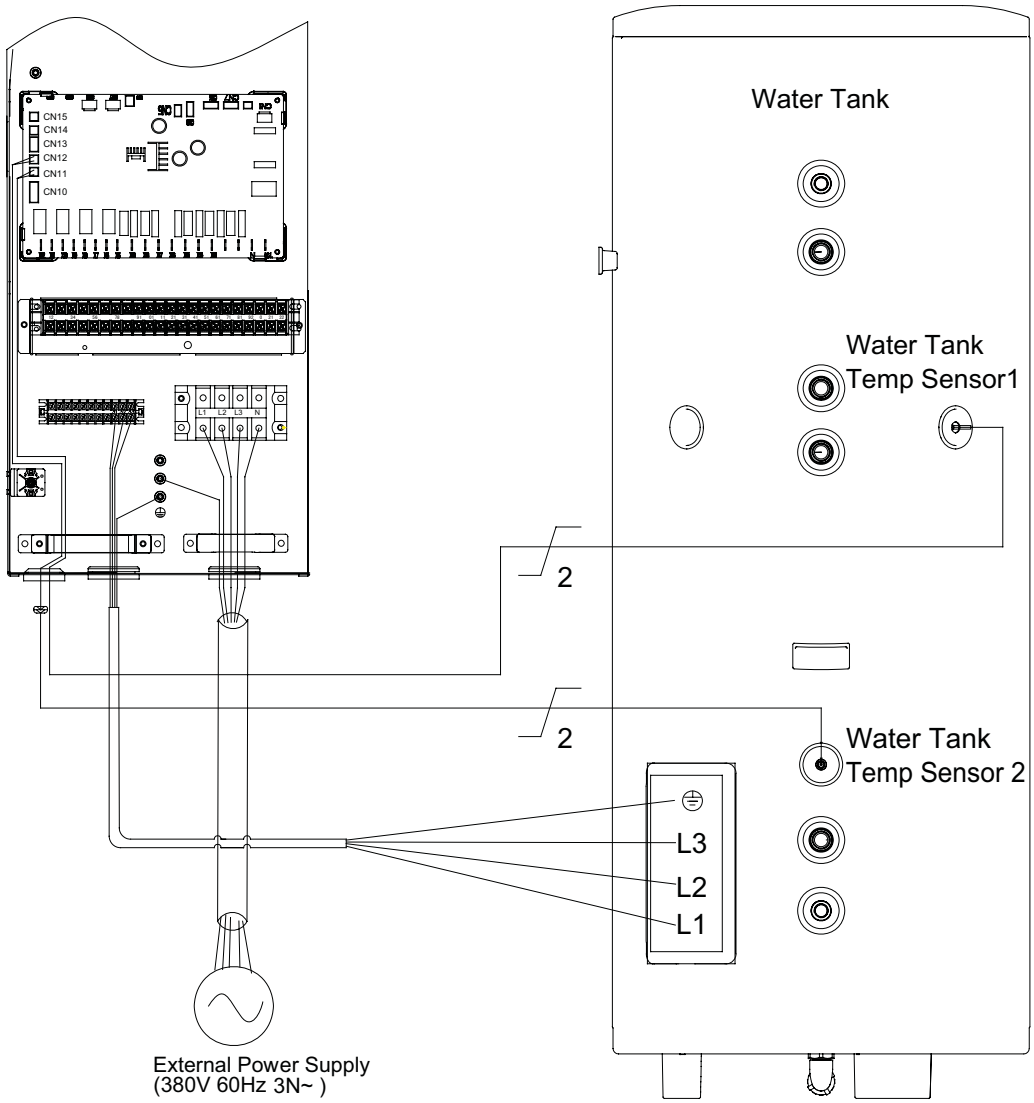
GRS-CQ6.0Pd/Na-K, GRS-CQ8.0Pd/Na-K, GRS-CQ10Pd/Na-K, GRS-CQ12Pd/Na-K, GRS-CQ14Pd/Na-K, GRS-CQ16Pd/Na-K:



GRS-CQ12Pd/Na-M, GRS-CQ14Pd/Na-M, GRS-CQ16Pd/Na-M:



GRS-CQ16Pd/Na-H:



2.3.7 2-Way Valve

2-way valve is required to control water flow while cooling operation. Role of 2-way valve is to cut off water flow into under floor loop in cooling mode when fan coil unit is equipped for cooling operation.

General Information

Type	Power	Operating Mode	Supported
NO 2-wire	230V 50Hz ~AC 230V 60Hz ~AC	Closing water flow	Yes
		Opening water flow	Yes
NC 2-wire	230V 50Hz ~AC 230V 60Hz ~AC	Closing water flow	Yes
		Opening water flow	Yes

(1). Normal Open type. When electric power is NOT supplied, the valve is open. (When electric power is supplied, the valve is closed.)

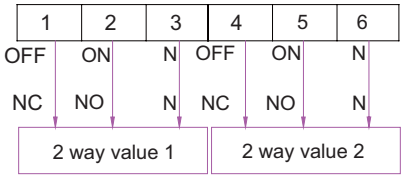
(2). Normal Closed type. When electric power is NOT supplied, the valve is closed. (When electric power is supplied, the valve is open.)

How to Wire 2-Way Valve:

Follow below procedures Step 1 ~ Step 2.

Step 1. Uncover front cover of the indoor unit and open the control box.

Step 2. Find terminal block and connect wire as below.



⚠ WARING!

① . Normal Open type should be connected to wire (NO) and wire (N)for valve closing in cooling mode.
② . Normal Closed type should be connected to wire (NC) and wire (N)for valve closing in cooling mode.
(NO) : Line signal (for Normal Open type) from PCB to 2-way valve
(NC) : Line signal (for Normal Closed type) from PCB to 2-way valve
(N) : Neutral signal from PCB to 2-way valve

2.3.8 3-Way Valve

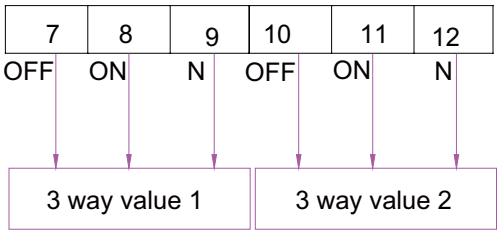
3-way valve is required to operate sanitary water tank. Role of 3-way valve is flow switching between under floor heating loop and water tank heating loop.

General Information

Type	Power	Operating Mode	Supported
SPDT 3-wire	230V 50Hz ~AC 230V 60Hz ~AC	Selecting “Flow A” between “Flow A” and “Flow B”	Yes
		Selecting “Flow B” between “Flow B” and “Flow A”	Yes

(1). SPDT = Single Pole Double Throw. Three wires consist of Live1 (for selecting (for selecting Flow B), and Neutral (for common).
(2). Flow A means ‘water flow from the indoor unit to under floor water circuit.’
(3). Flow B means ‘water flow from the indoor unit to sanitary water tank.’

How to Wire 3-Way Valve:
Follow below procedures Step 1 ~ Step 2.
Step 1. Uncover front cover of the indoor unit and open the control box.
Step 2. Find terminal block and connect wire as below.



⚠ WARING!

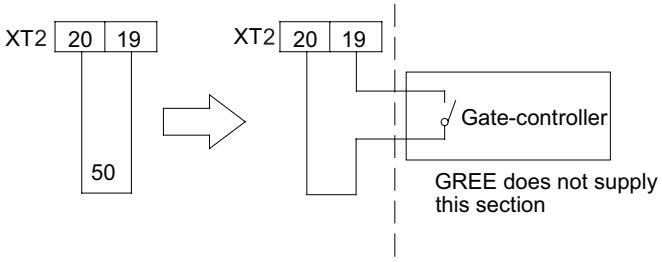
① . 3-way valve should select water tank loop when electric power is supplied to wire (OFF) and wire (N).
② . 3-way valve should select under floor loop when electric power is supplied to wire (ON) and wire (N).
(OFF) : Line signal (Water tank heating) from PCB to 3-way valve
(ON) : Line signal (Under floor heating) from PCB to 3-way valve
(N) : Neutral signal from PCB to 3-way valve

2.3.9 Gate-controller

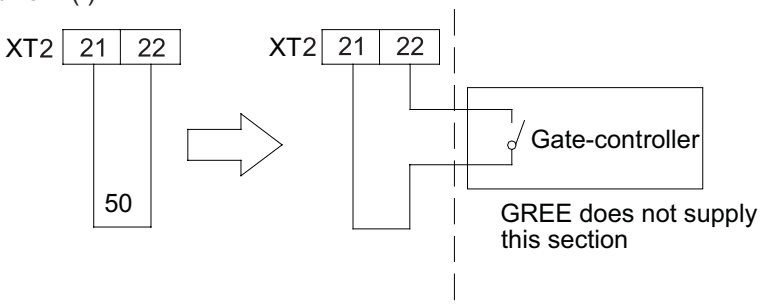
If there is gate control function, pull out the leading wire 50 on terminal board(XT2) between19 and 20 or between 21 and 22, and then connect the Gate-controller .

Installation Guide follow as:

(1). GRS-CQ6.0Pd/Na-K(I), GRS-CQ8.0Pd/Na-K(I), GRS-CQ10Pd/Na-K(I), GRS-CQ12Pd/Na-K(I), GRS-CQ14Pd/Na-K(I), GRS-CQ16Pd/Na-K(I), GRS-CQ12Pd/Na-M(I), GRS-CQ14Pd/Na-M(I), GRS-CQ16Pd/Na-M(I)



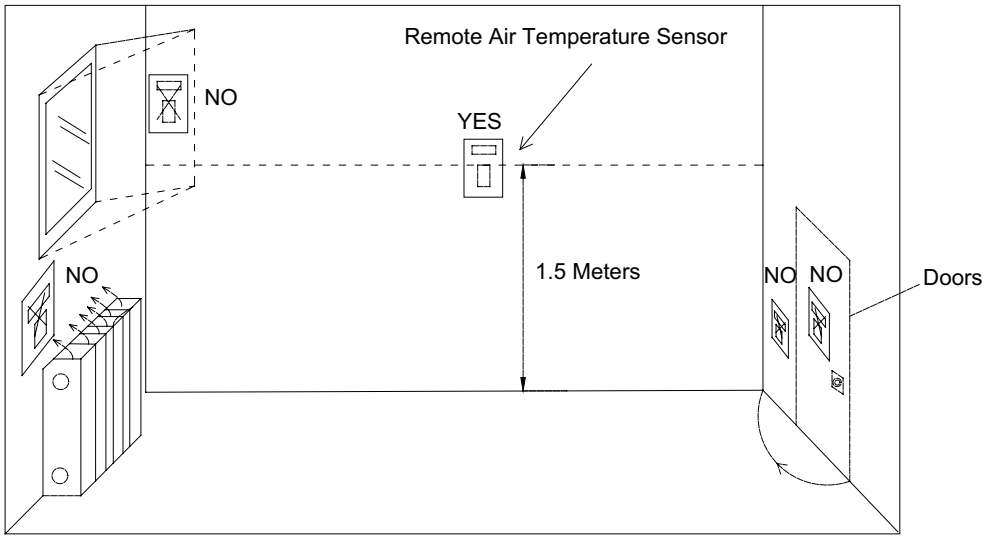
(2). GRS-CQ16Pd/Na-H(I)

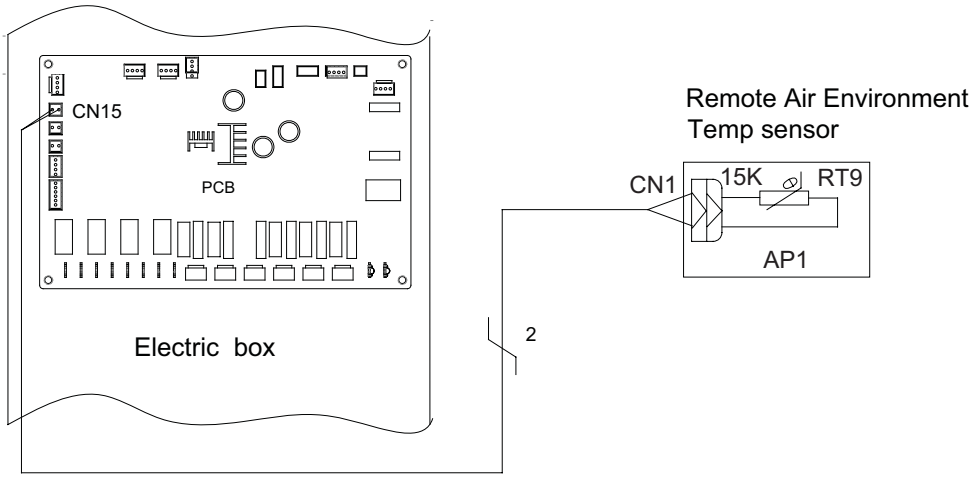


2.3.10 Remote Air Temperature Sensor

Front side

Back side





Note:

①. Distance between the indoor unit and the remote air temperature senor should be less than 15 meter due to length of the connection cable of remote air temperature sensor;

②. Height from floor is approximately 1.5 meter;

③. Remote air temperature sensor can not be located where the area may be hidden when door is open;

④. Remote air temperature sensor can not be located where external thermal influence may be applied;

⑤. Remote air temperature sensor should be installed where space heating is mainly applied;

⑥. After the Remote air temperature sensor is installed, should be set the value form “0”to“1” at the function code 1 in the control panel, so as to select remote air temperature to the control point.

2.3.11 Thermostat

(1). GRS-CQ6.0Pd/Na-K(I), GRS-CQ8.0Pd/Na-K(I), GRS-CQ10Pd/Na-K(I), GRS-CQ12Pd/Na-K(I), GRS-CQ14Pd/Na-K(I), GRS-CQ16Pd/Na-K(I), GRS-CQ12Pd/Na-M(I), GRS-CQ14Pd/Na-M(I), GRS-CQ16Pd/Na-M(I)

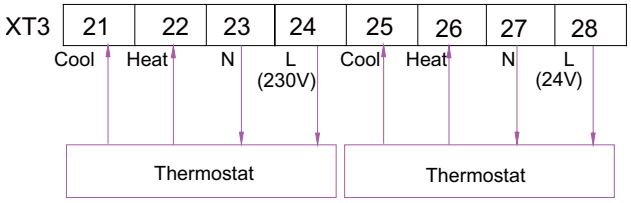


Fig .1

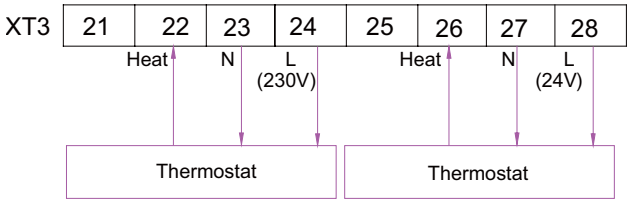


Fig .2

(2). GRS-CQ16Pd/Na-H(I)

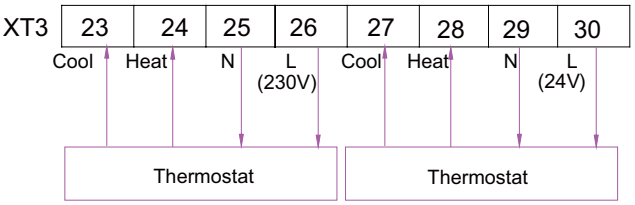


Fig .3

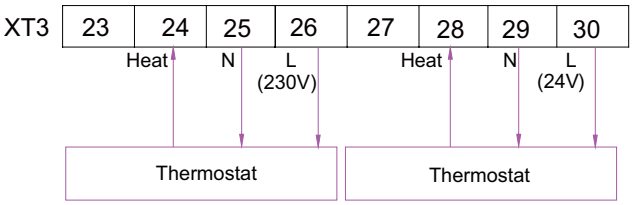


Fig .4

How to Wire Thermostat

(1). Uncover the front cover of the indoor unit and open the control box.

(2). Identify the power specification of the thermostat, if it is 230V , find terminal block XT3 as NO.21~24 or NO.23~26; Otherwise, if it is 24V, find terminal block XT3 as NO.25~28 or NO.27~30;

(3). If it is Heating/Cooling thermostat, please connect wire as Fig 1 or Fig 3;

(4). If it is Heating only thermostat, please connect wire as Fig 2 or Fig 4;

⚠CAUTION!

①. Never use 230V AC and 24V AC Thermostat at the same time, otherwise, it will cause short-circuit and power cut-off by circuit breaker;

②. Setting temperature by Thermostat(heating or cooling) should be chosen within the setting temperature range of the product ;

③. For other constrains, please refer to previous page where constrains about remote air temperature sensor

④. Do not connect external electric loads, Wire (L) and (N) should be used only for operation Electric type thermostat.

⑤. Never connect external electric loads such as valves, fan coil units, etc. If connected, PCB of the indoor unit can be seriously damaged.

⑥. Installation of Thermostat is very similar to that of Remote air temperature sensor.

MAINTENANCE

UNITS MAINTENANCE

1 ERROR CODE LIST

1) Complete Unit Code

Code Indication	Error Name	Source of Error Signal	Control Description
F4	Outdoor environment temp sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F6	Defrost temp sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F7	Discharge temp sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F5	Suction temp sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
EF	Outdoor fan error	● Mainboard of outdoor unit is damaged. ● The wire connecting the wiring terminals of the mainboard breaks.	If it occurs for 3 times during one hour, it is cleared by de-energization. If it occurs for less than 3 times, it will be automatically cleared.
E5	Overload protection of compressor or driver error	● It is the compressor overload switch error or the compressor drive protection, and please see the indicating lamp on the main board of the outdoor unit or the 88 nixie tube for the protection code.	Drive failure; it will be automatically cleared after 1 min.
E1	Comp High-pressure protection	● Comp High-pressure switch is broken or the wiring is loose. ● The water in the tank is not enough. ● The installation of tank temp sensor is not correct. ● The gas valve and liquid valve are not fully open. ● The electric expansion valve can not work normally.	De-energize the unit and then, energize it again. If the malfunction is removed, the code will be cleared.
E3	Comp Low- pressure protection	● Comp Low-pressure switch is broken or the wiring is loose. ● The system has leaked. ● The fans stop running or reverse.	If it occurs for 2 times during 40 minutes, it is cleared by de-energization or turnning off. If it occurs for less than 2 times, it will be automatically cleared.
E4	Comp Discharge temp protection	● The resistance of temperature sensor is not correct. ● The electric expansion valve is blocked. ● The system has leaked. ● Mainboard of outdoor unit is damaged.	If it occurs for 3 times during one hour, it is cleared by de-energization. If it occurs for less than 3 times, it will be automatically cleared.

C5	Indoor capacity switch error		De-energize the unit and then, energize it again. If the malfunction is removed, the code will be cleared.
E6	Communication malfunction(between outdoor and indoor mainboard)	● The communication line of the unit is not connected. ● The communication line is not through. ● The communication line of the unit is not connected correctly. ● The two ends of communication line are not mounted with magnetic ring. ● The outdoor unit is not electrically powered	It will be cleared once communication recovers or it will be shown all the time.
E6	Communication malfunction(between outdoor mainboard and wired controller)	● The communication line of the unit is not connected. ● The communication line is not through. ● The communication line of the unit is not connected correctly. ● The two ends of communication line are not mounted with magnetic ring. ● The outdoor unit is not electrically powered	It will be cleared once communication recovers or it will be shown all the time
Fc	High pressure sensor error	● The sensor is damaged. ● The wire of the sensor is loose. ● The position of the sensor is wrong	It will be automatically cleared after the failure is removed.
F9	Outlet temperature sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
dH	Backup outlet temperature sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F1	Lliquid pipe temperature sensor Inside refrigerant error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F8	Inlet temperature sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
FE	The second sanitary water tank temperature sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
FL	The first sanitary water tank temperature sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.

F3	Gas pipe temperature sensor inside refrigerant error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
dF	other thermal outlet temperature sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F0	Remote room temperature sensor error	● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
Ec	Water switch error	● The switch is damaged. ● The wire of the switch is loose. ● The position of the switch is wrong	It will be cleared after the unit is energized again.
E2	Indoor anti-frozen protetion	● The resistance of temperature sensor is not correct. ● The electric expansion valve can not work normally.	It will be cleared once malfunction is removed or it will be shown all the time; but it will be cleared immediately when switching operation mode.
No display	Sanitary water tank High-temp protection	● The resistance of temperature sensor is not correct. ● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● Mainboard of outdoor unit is damaged.	Press ON/OFF key to clear
Ed	outlet temperature High-temp protection (This error code will not displayed on wired controller but only on mainboard of outdoor unit)	● The resistance of temperature sensor is not correct. ● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● Mainboard of outdoor unit is damaged.	If the malfunction is removed, the code will be automatically cleared.
No display	solar outlet High-temp protection	● The resistance of temperature sensor is not correct. ● The plug on temperature sensor is not correctly connected to the socket on mainboard. ● Mainboard of outdoor unit is damaged.	Press ON/OFF key to clear
EH	the first internal electric heater connection Malfunction	● The AC contactor is damaged.	De-energize the unit and then, energize it again. If the malfunction is removed, the code will be cleared.
EH	second internal electric heater connection Malfunction	● The AC contactor is damaged.	De-energize the unit and then, energize it again. If the malfunction is removed, the code will be cleared.
EH	sanitary water tank electric heater connection Malfunction	● The AC contactor is damaged.	De-energize the unit and then, energize it again. If the malfunction is removed, the code will be cleared.
dU	Pull-out of the gate-controller	● the gate-controller is pull out	It will be cleared after the gate-controller is rewire

2) Drive Failure Code

● The Same Malfunctions for Single-phase Unit and Three-phase Unit

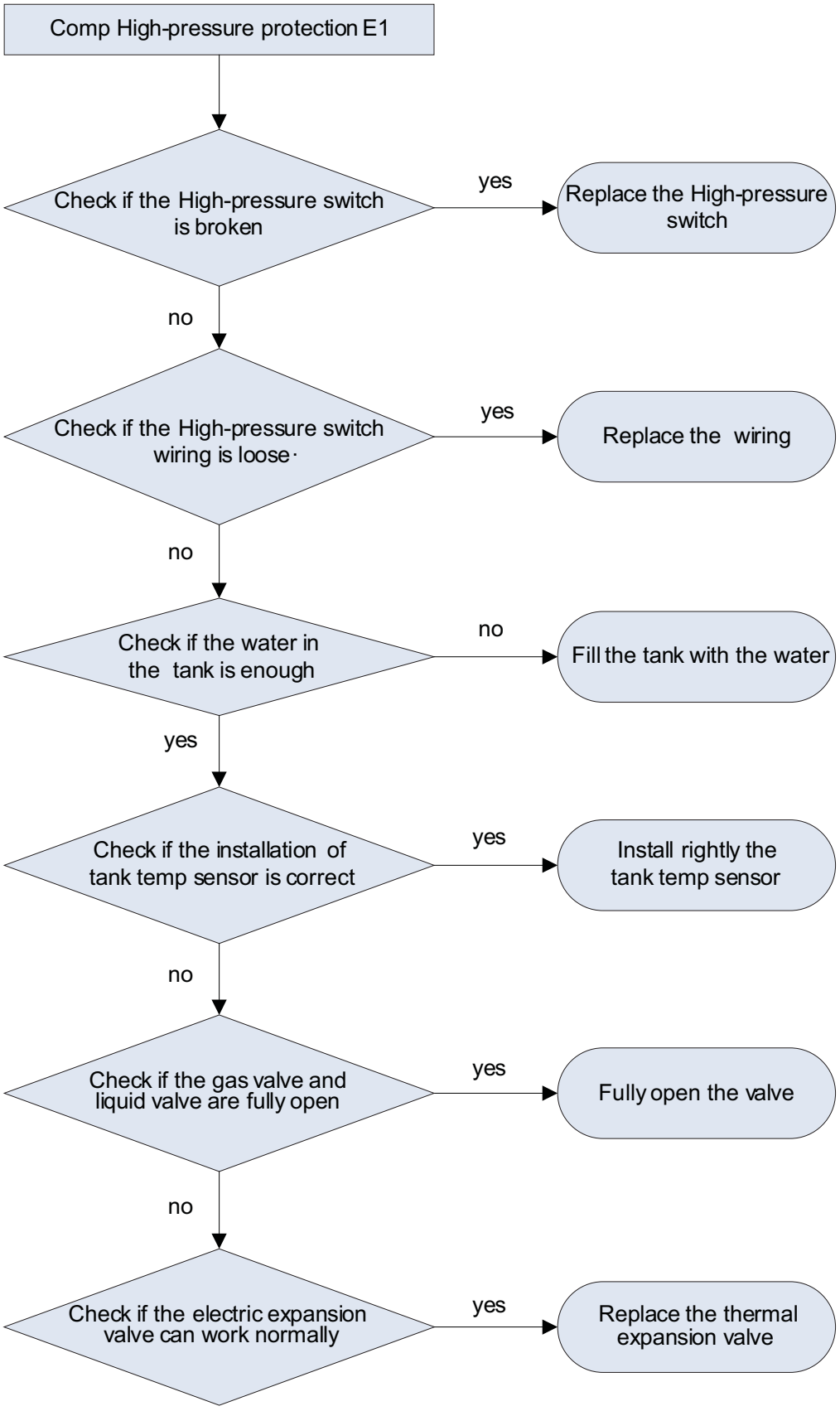
Item		Display on Nixie Tube of Outdoor Unit	Display on Wired Controller	Remarks
Inverter Drive Failure	DC busbar over-voltage protection	PH	E5	
	IPM or PFC over-temperature protection	P8	E5	
	Current sense circuit error	Pc	E5	
	IPM or PFC temperature sensor error	P7	E5	
	Compressor current protection	P5	E5	
	DC busbar under-voltage protection	PL	E5	
	Compressor startup failure	Lc	E5	
	Drive module reset	P0	E5	
	Compressor motor desynchronizing	H7	E5	
	Phase loss	Ld	E5	
	Drive-to-main-control communication error	P6	E5	
	IPM protection	H5	E5	
	Compressor overload protection	H3	E5	
	AC current protection (input side)	PA	E5	
	Input AC voltage abnormality	PP	E5	
	PFC protection	Hc	E5	

● The Malfunctions only for Single-phase Unit

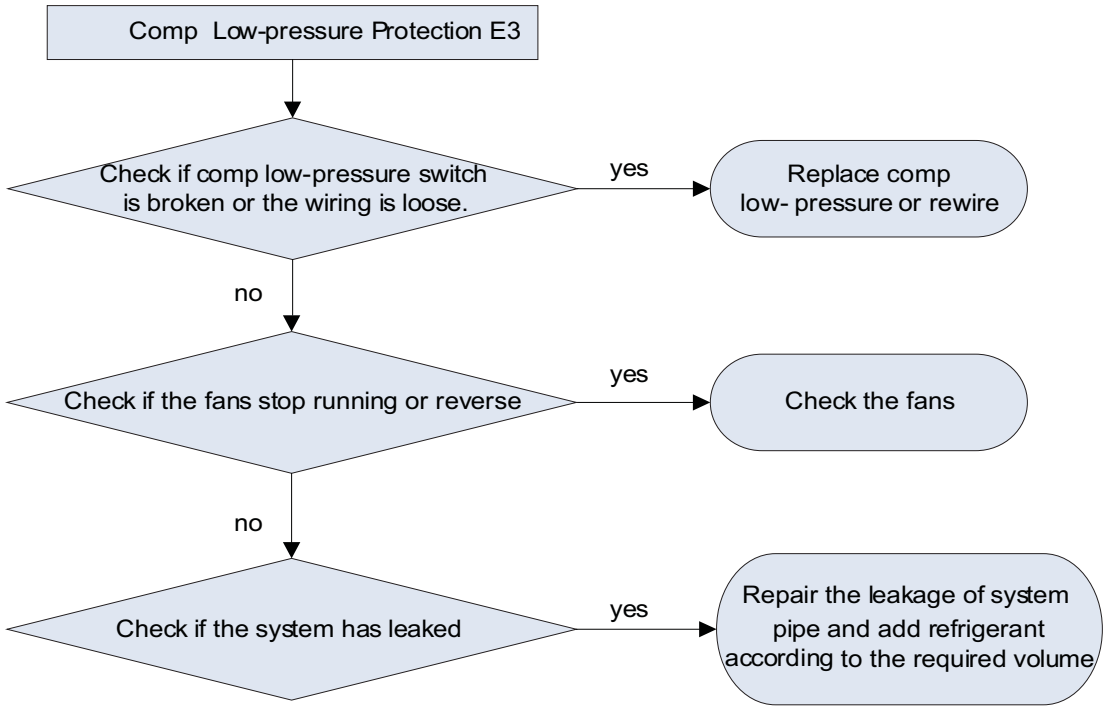
Item		Display on Nixie Tube of Outdoor Unit	Display on Wired Controller	Remarks
Inverter Drive Failure	Charging circuit error	PU	E5	

2 FLOW CHART OF TROUBLESHOOTING

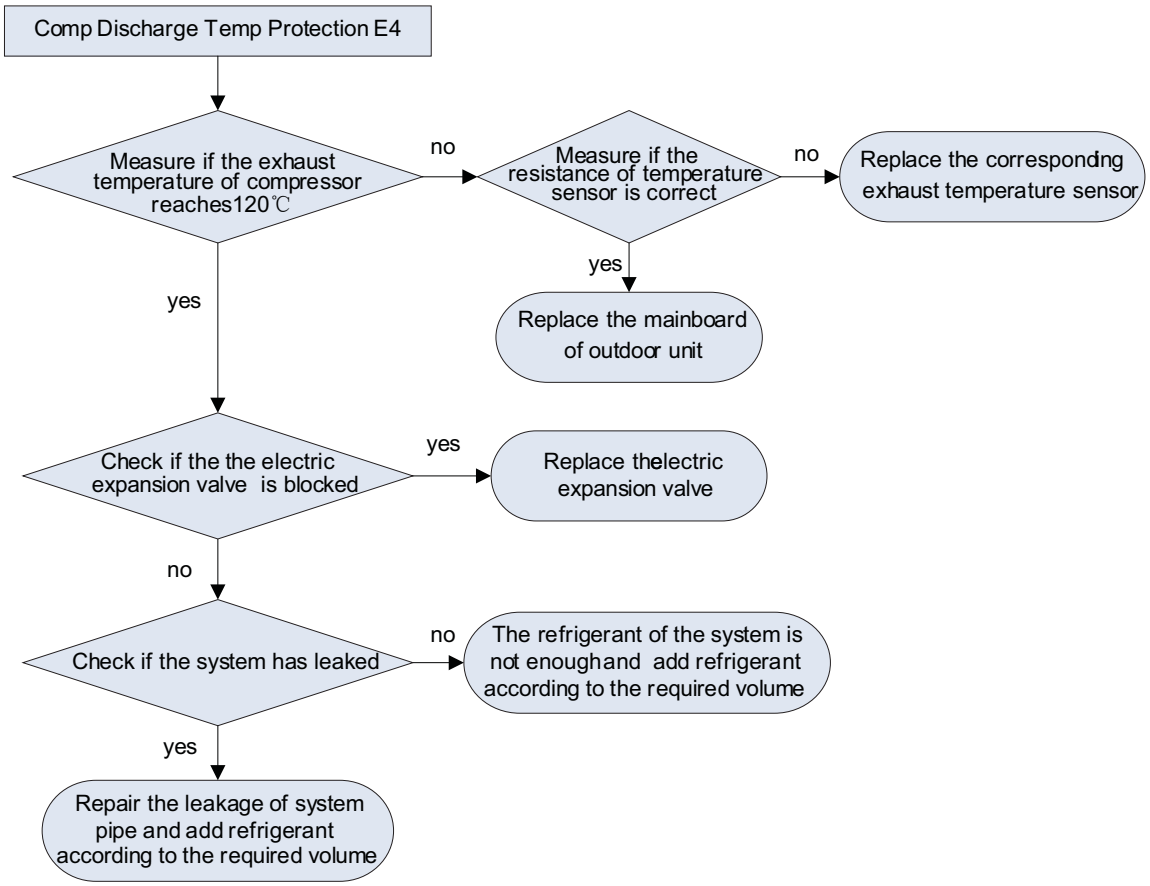
(1) Comp High-pressure Protection E1


Comp High-pressure protection E1
Check if the High-pressure switch is broken
yes
Replace the High-pressure switch
no
Check if the High-pressure switch wiring is loose·
yes
Replace the wiring
no
Check if the water in the tank is enough
no
Fill the tank with the water
yes
Check if the installation of tank temp sensor is correct
yes
Install rightly the tank temp sensor
no
Check if the gas valve and liquid valve are fully open
yes
Fully open the valve
no
Check if the electric expansion valve can work normally
yes
Replace the thermal expansion valve

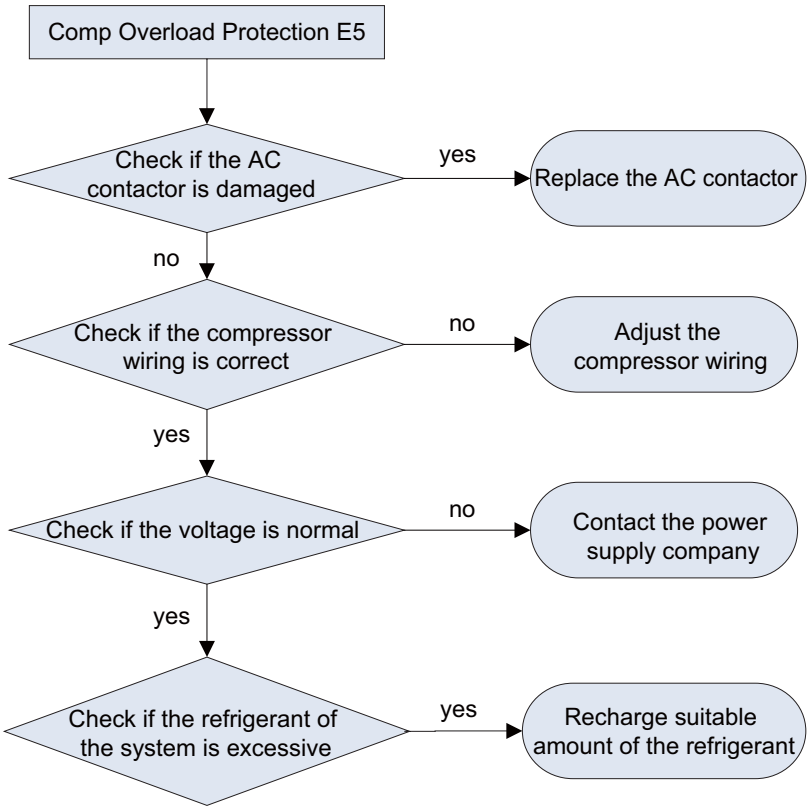
(2) Comp Low- pressure Protection E3


Comp Low-pressure Protection E3
Check if comp low-pressure switch is broken or the wiring is loose.
yes
Replace comp low- pressure or rewire
no
Check if the fans stop running or reverse
yes
Check the fans
no
Check if the system has leaked
yes
Repair the leakage of system pipe and add refrigerant according to the required volume

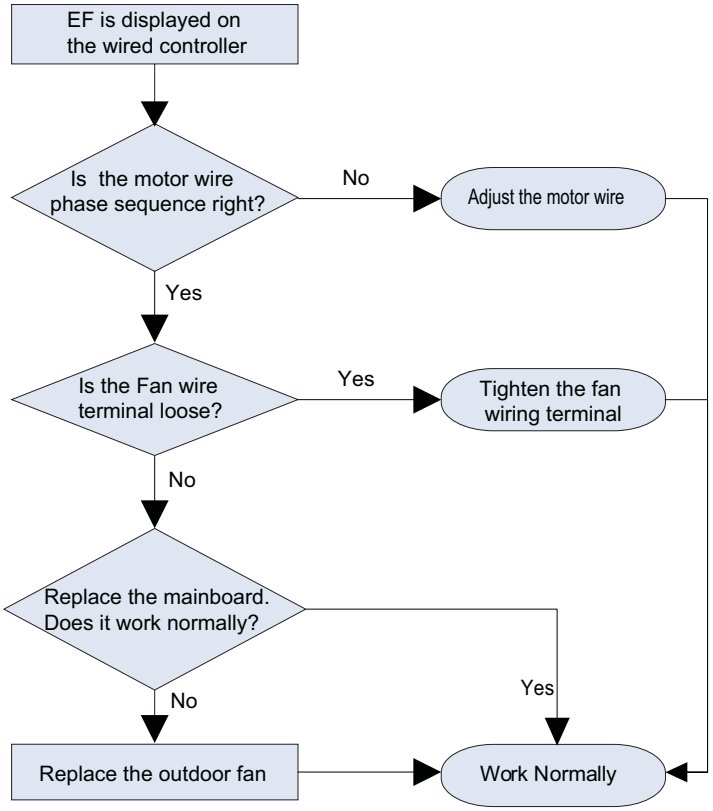
(3) Comp Discharge Temp Protection E4


Comp Discharge Temp Protection E4
Measure if the exhaust temperature of compressor reaches120℃
no
Measure if the resistance of temperature sensor is correct
no
Replace the corresponding exhaust temperature sensor
yes
Replace the mainboard of outdoor unit
yes
Check if the the electric expansion valve is blocked
yes
Replace thelectric expansion valve
no
Check if the system has leaked
no
The refrigerant of the system is not enoughand add refrigerant according to the required volume
yes
Repair the leakage of system pipe and add refrigerant according to the required volume

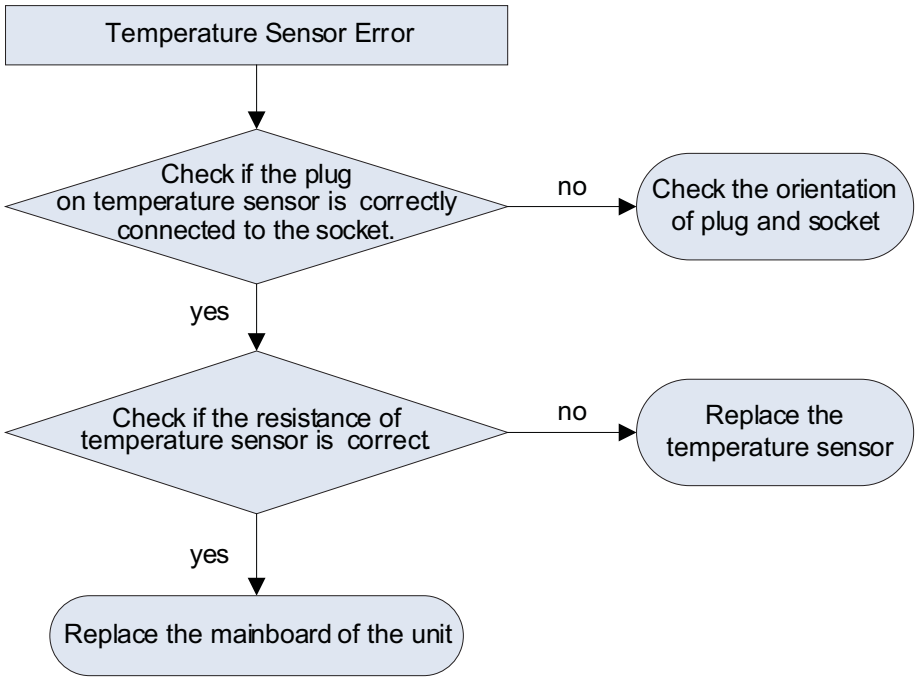
(4) Overload proection of compressor or driver error E5



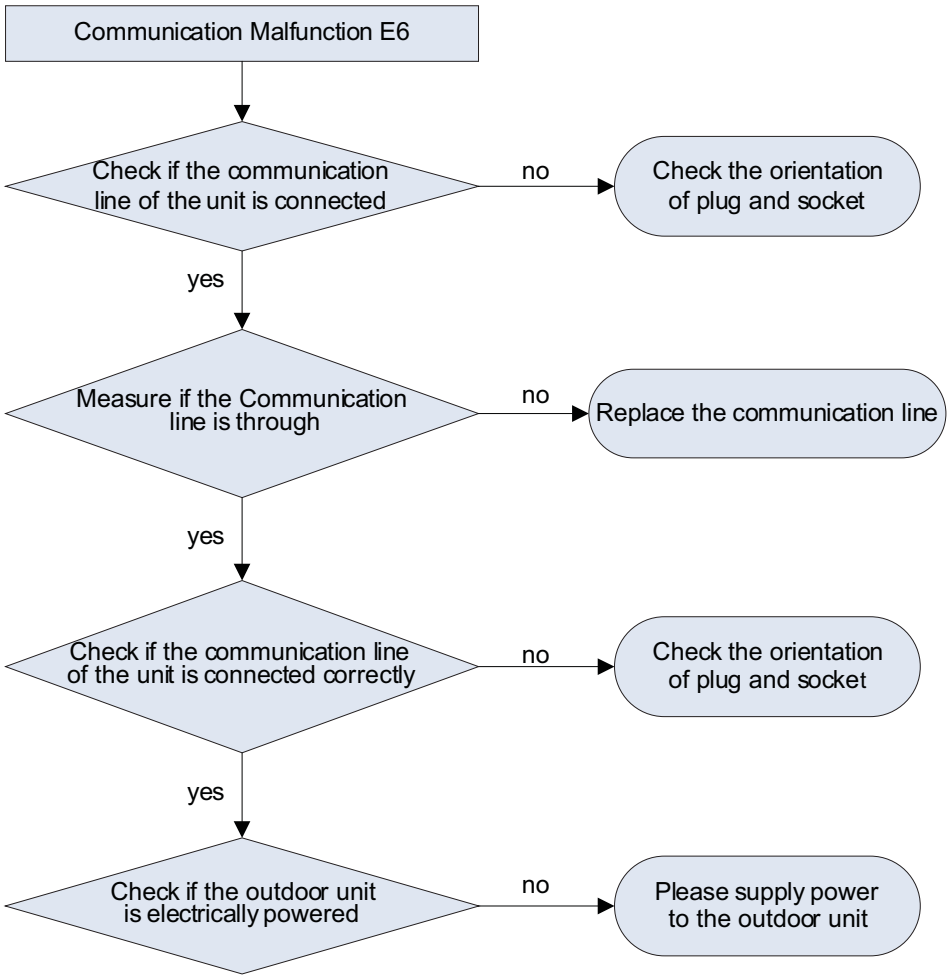
(5) DC fan error EF



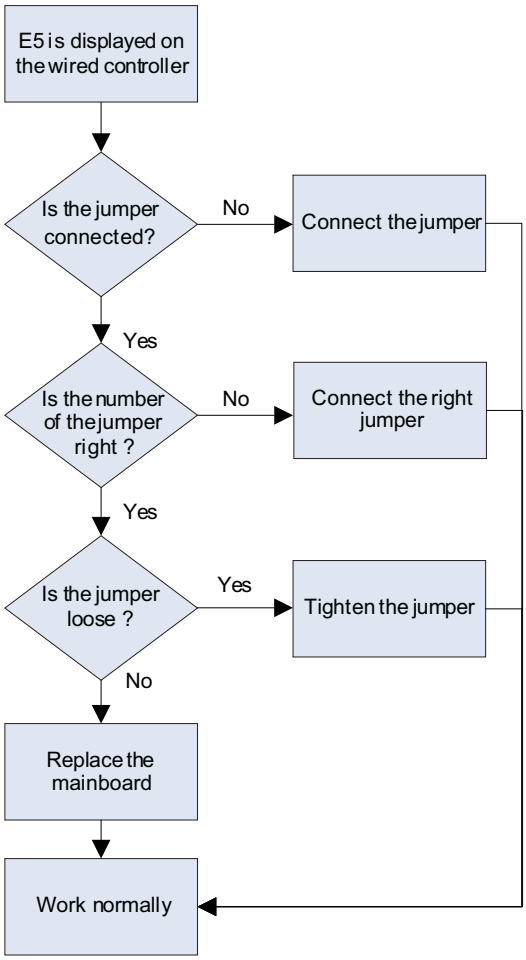
(6) Temperature sensor error


Temperature Sensor Error
Check if the plug on temperature sensor is correctly connected to the socket.
no
Check the orientation of plug and socket
yes
Check if the resistance of temperature sensor is correct
no
Replace the temperature sensor
yes
Replace the mainboard of the unit

(7) Communication Malfunction E6


Communication Malfunction E6
Check if the communication line of the unit is connected
no
Check the orientation of plug and socket
yes
Measure if the Communication line is through
no
Replace the communication line
yes
Check if the communication line of the unit is connected correctly
no
Check the orientation of plug and socket
yes
Check if the outdoor unit is electrically powered
no
Please supply power to the outdoor unit

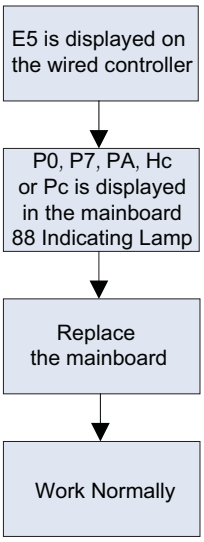
(8) Indoor capacity switch error(code:"C5")



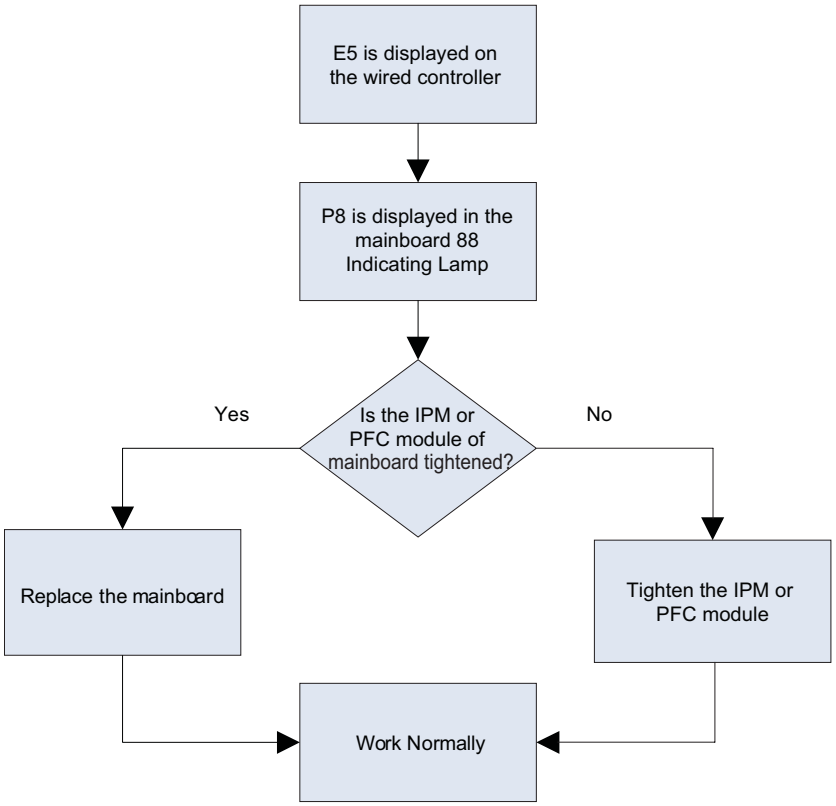
3 DIAGNOSIS OF DRIVING

3.1 Diagnosis Flowchart of Driving of Single-phase Unit and Three-phase Unit

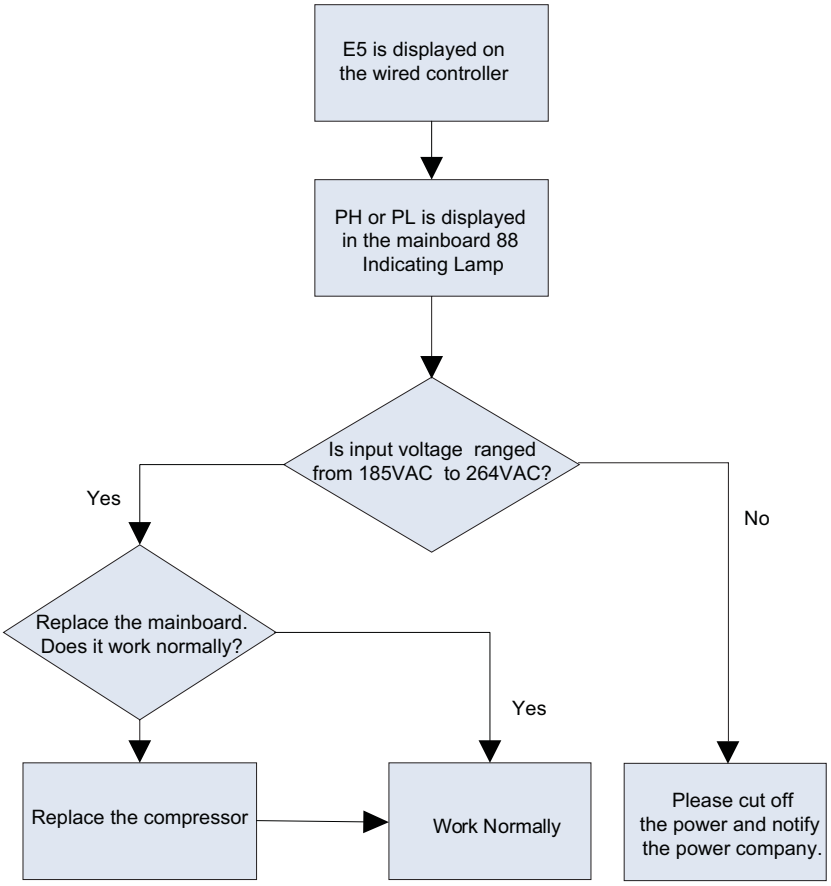
3.1.1 Drive module reset(code:"P0") ; IPM or PFC temperature sensor error(code:"P7") ; AC current protection (input side)(code:"PA"); Current sense circuit error(code:"Pc"); PFC protection(code:"Hc")


E5 is displayed on the wired controller
P0, P7, PA, Hc or Pc is displayed in the mainboard 88 Indicating Lamp
Replace the mainboard
Work Normally

3.1.2 IPM or PFC over-temperature protection(code:"P8")

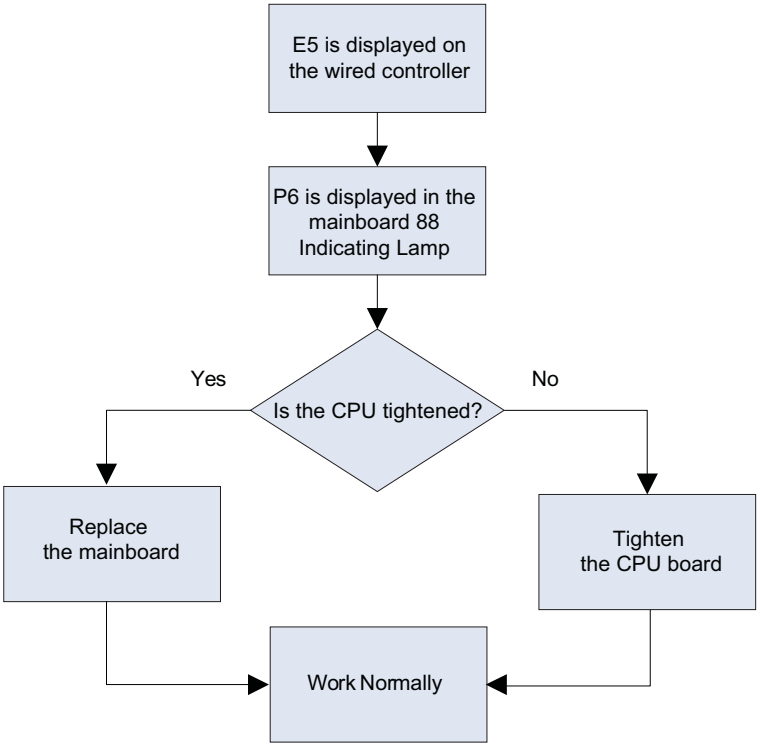

E5 is displayed on the wired controller
P8 is displayed in the mainboard 88 Indicating Lamp
Is the IPM or PFC module of mainboard tightened?
Yes
No
Replace the mainboard
Tighten the IPM or PFC module
Work Normally

3.1.3 DC busbar over-voltage protection(code:"PH") ; DC busbar under-voltage protection(code:"PL")

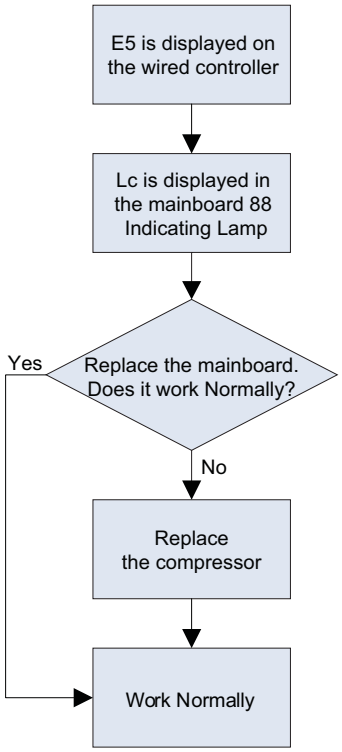

E5 is displayed on the wired controller
PH or PL is displayed in the mainboard 88 Indicating Lamp
Is input voltage ranged from 185VAC to 264VAC?
Yes
No
Replace the mainboard. Does it work normally?
Yes
Replace the compressor
Work Normally
Please cut off the power and notify the power company.

Notice: three-phase input voltage is in the range from 320VAC to 475VAC.

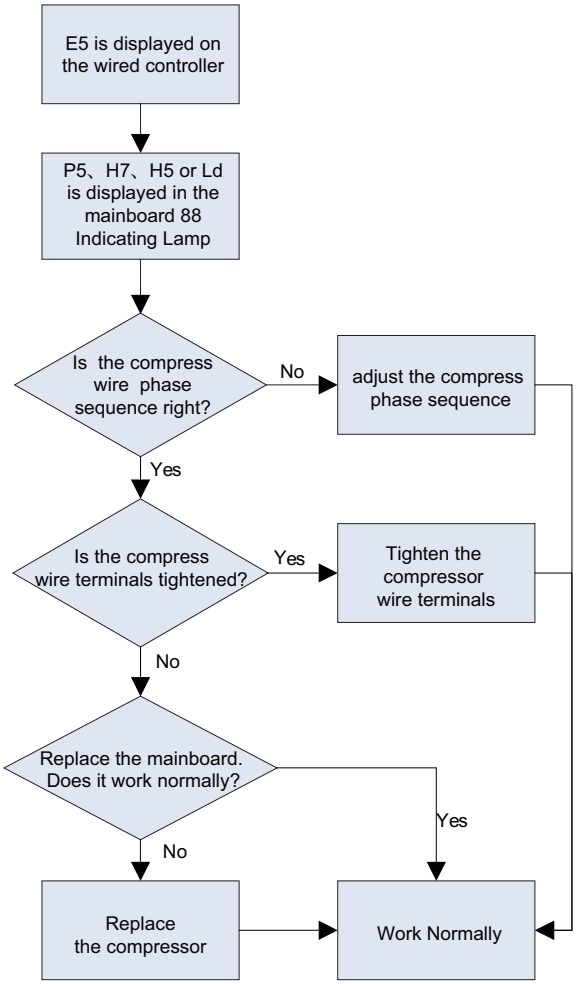
3.1.4 Drive-to-main-control communication error(code:"P6")



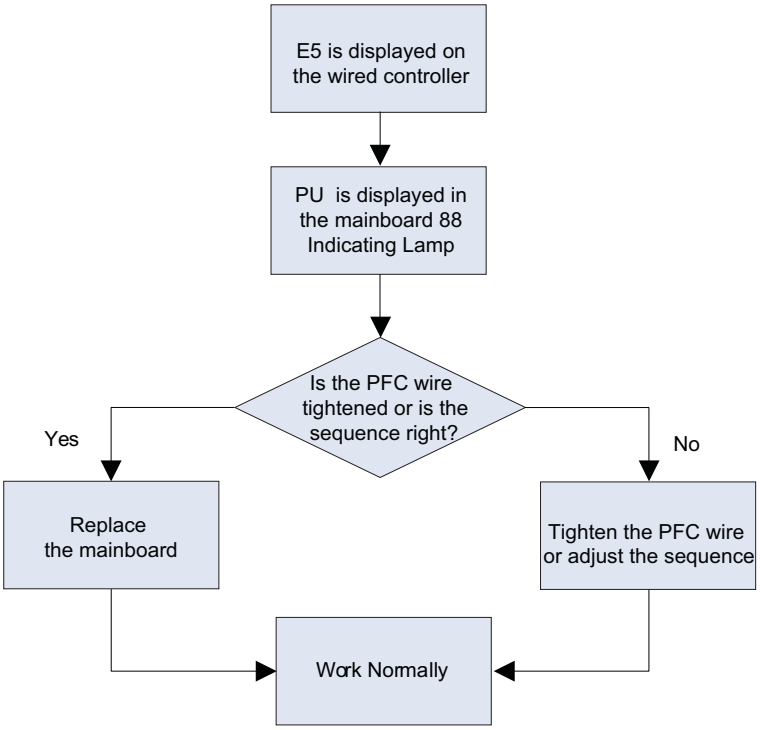
3.1.5 Compressor startup failure(code:"Lc")


E5 is displayed on the wired controller
Lc is displayed in the mainboard 88 Indicating Lamp
Replace the mainboard. Does it work Normally?
Yes
No
Replace the compressor
Work Normally

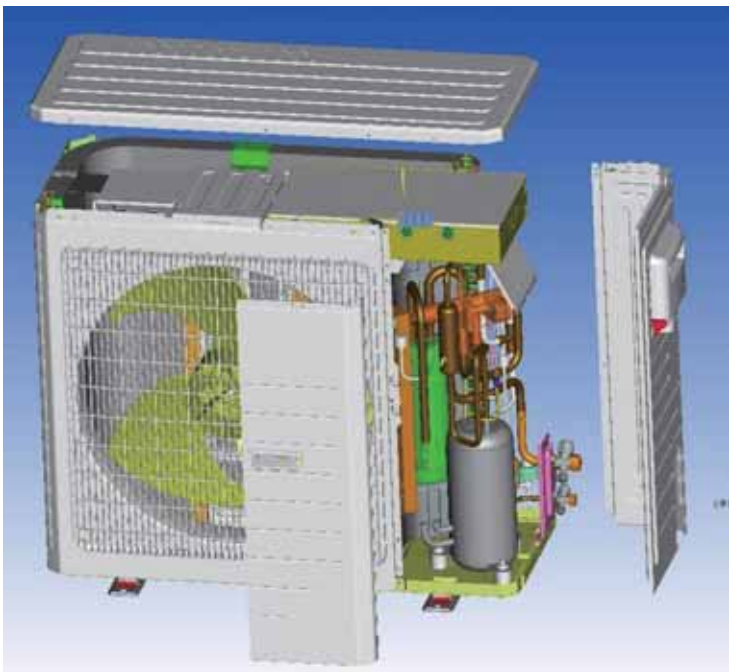
3.1.6 Compressor current protection(code:"P5") ; Compressor motor desynchronizing(code:"H7") ; IPM protection(code:"H5"); Phase loss(code:"Ld")



3.1.7 Charging circuit error(code:"PU")


E5 is displayed on the wired controller
PU is displayed in the mainboard 88 Indicating Lamp
Is the PFC wire tightened or is the sequence right?
Yes
No
Replace the mainboard
Tighten the PFC wire or adjust the sequence
Work Normally

4 DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

Disassembly and assembly of external casing	
Remark: Please first cut off the power and discharge the Freon out of the unit	
Operation Procedure	Illustration
OutdooUnit: GRS-CQ6.0Pd/Na-K(O),GRS-CQ8.0Pd/Na-k(O),GRS-CQ10Pd/Na-K(O)	
1) **Remove the cover.front side plate l and right side plate.** ● Loosen the two tapping screws, and remove the cover, the front side plate and right side plate.[**Fig. 2**]	 Fig. 1  Fig. 2

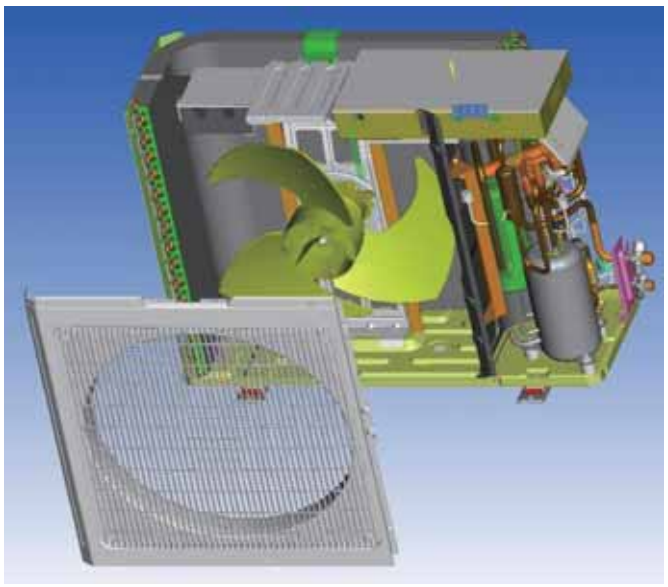


Fig. 3

2) **Remove the Cabinet.**

• Loosen the two tapping screws, and remove the Cabinet. [**See Fig. 3**]

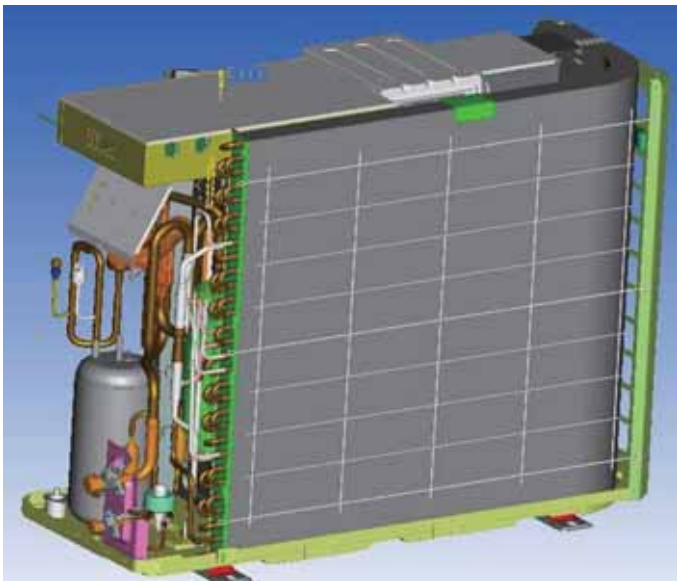


Fig. 4

3) **Remove right side plate.**
● Loosen the two tapping screws, and remove right side plate. [**See Fig.5**]

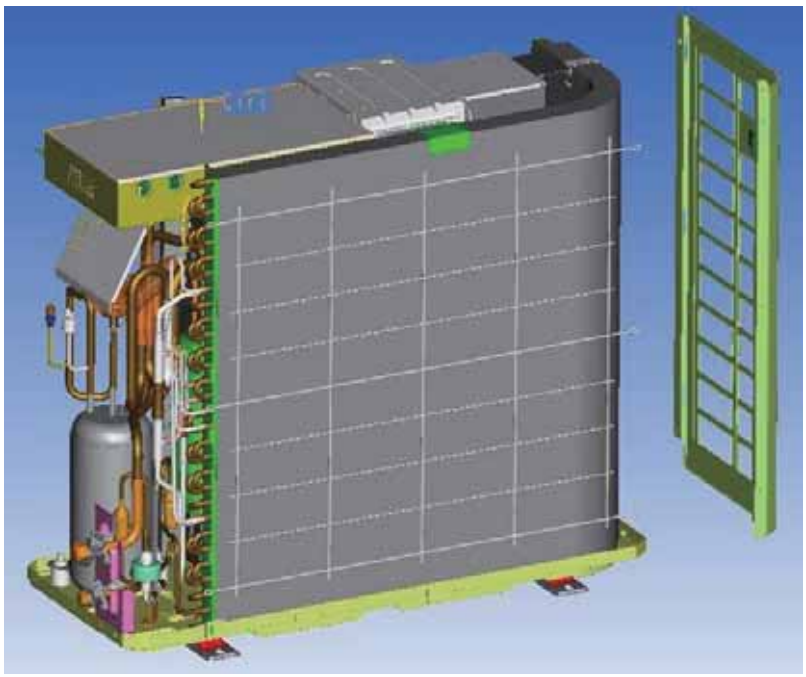


Fig. 5

4) **Remove the Rear Grill**
● Loosen the two tapping screws, and remove the Rear Grill.[**See Fig.6**]

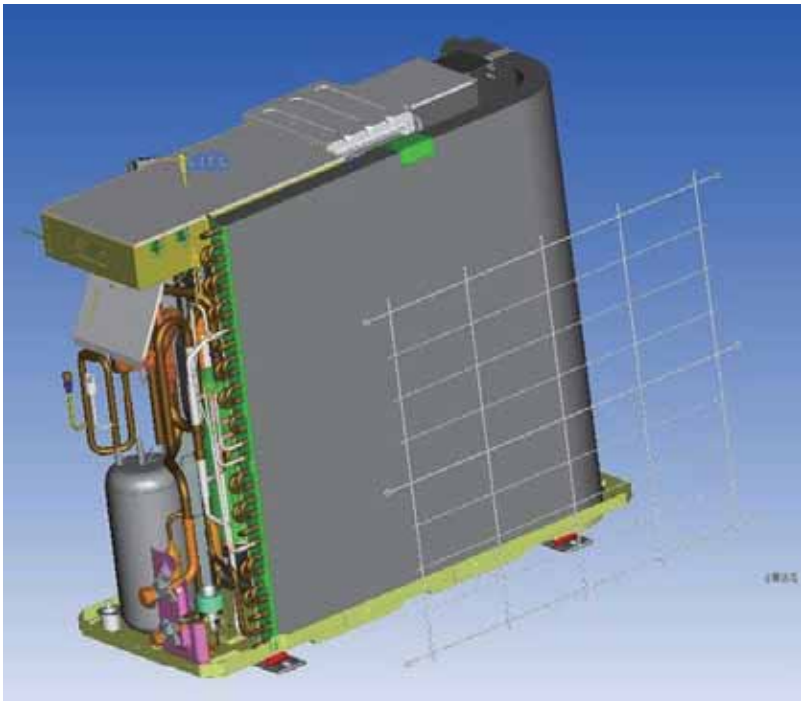


Fig.6

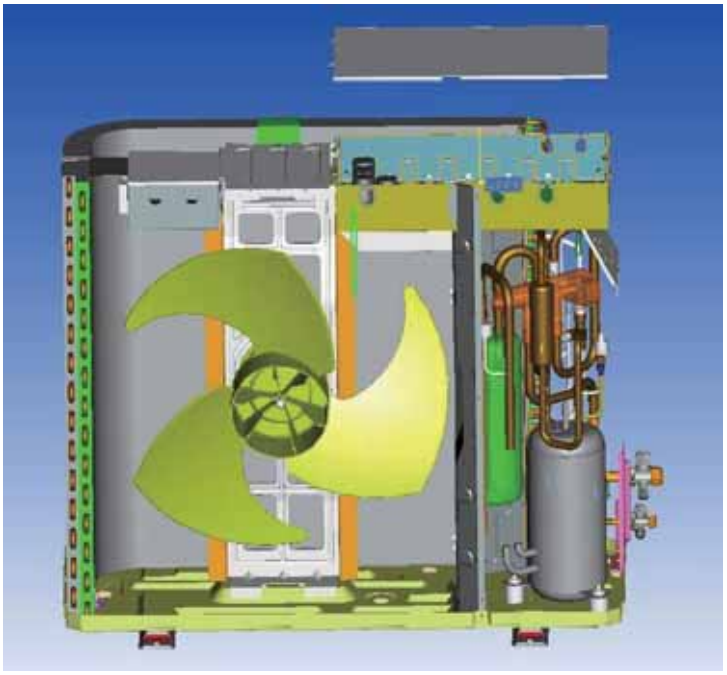


Fig.7

5) **Remove the Electric Box Assy**

● Loosen the two tapping screws, and remove the Electric Box Assy .[**See Fig. 8**]

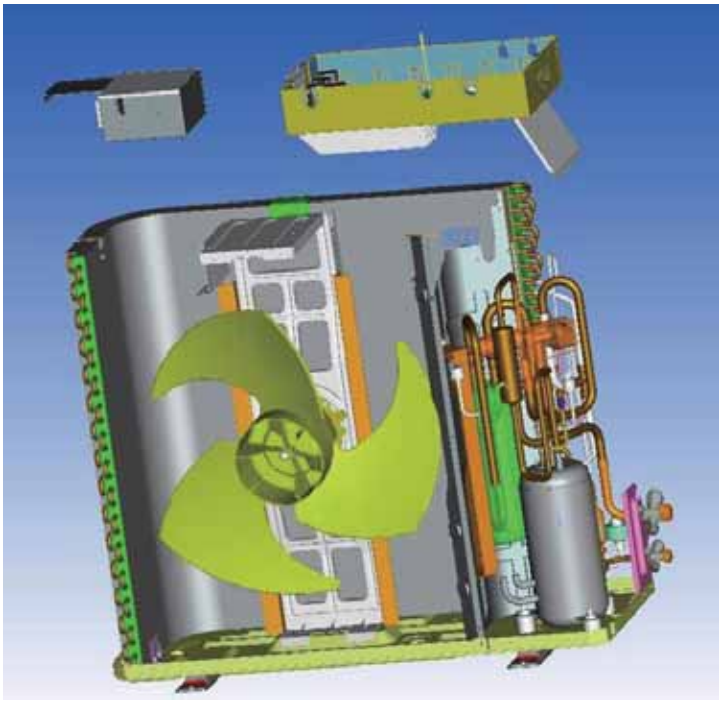


Fig.8

6) **Remove the axial fan**

● Loosen the ball nuts , and remove the axial fan. [**See Fig. 9**]

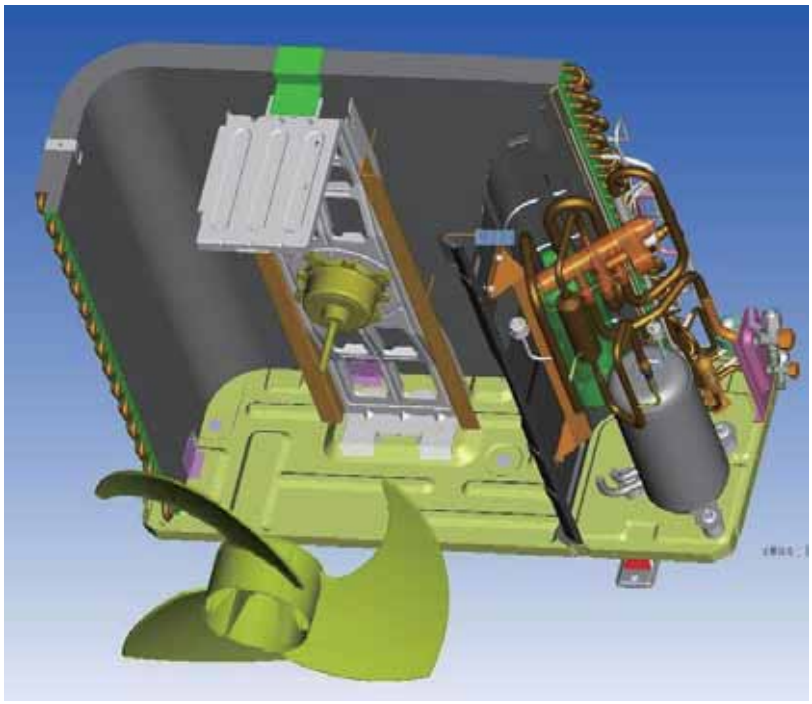


Fig. 9

7) **Remove the motor**

● Loosen the screws fixing the motor support. Remove the motor support.

● Loosen the wire of motor, and pull it through the hole. Remove the motor. [**See Fig. 10**]

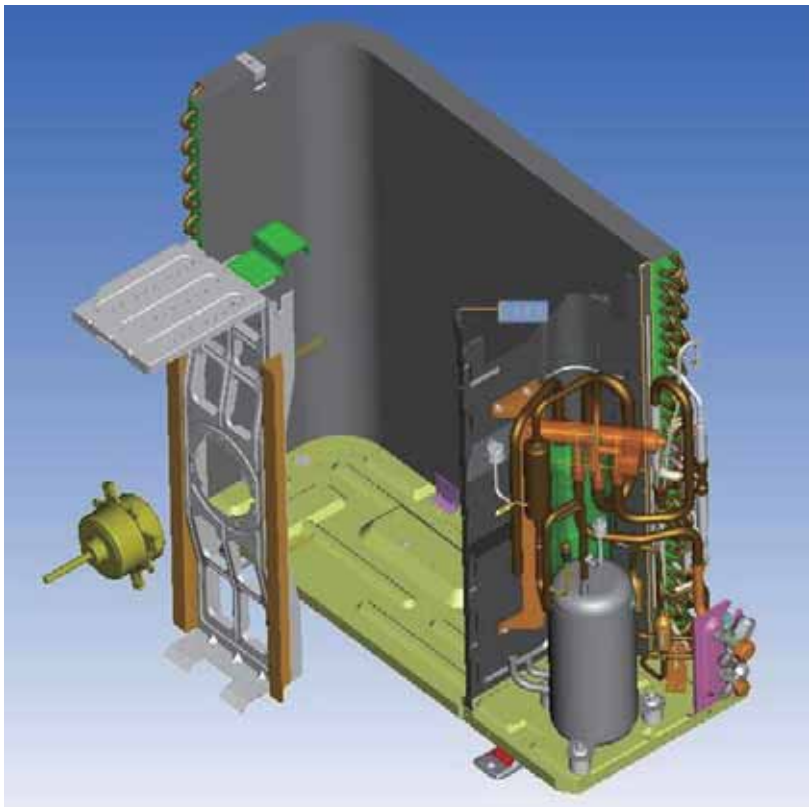


Fig.10

8) **Remove the 4-way valve**

- Loosen the screws fixing the coil of 4-way valve.
- Remove the coil of 4-way valve.
- Unsolder the tubes connected to the 4-way valve.
- Remove the 4-way valve. [**See Fig.11**]

Note: When welding, the valve should be covered by wet cloth in order to avoid the high temp. damage.

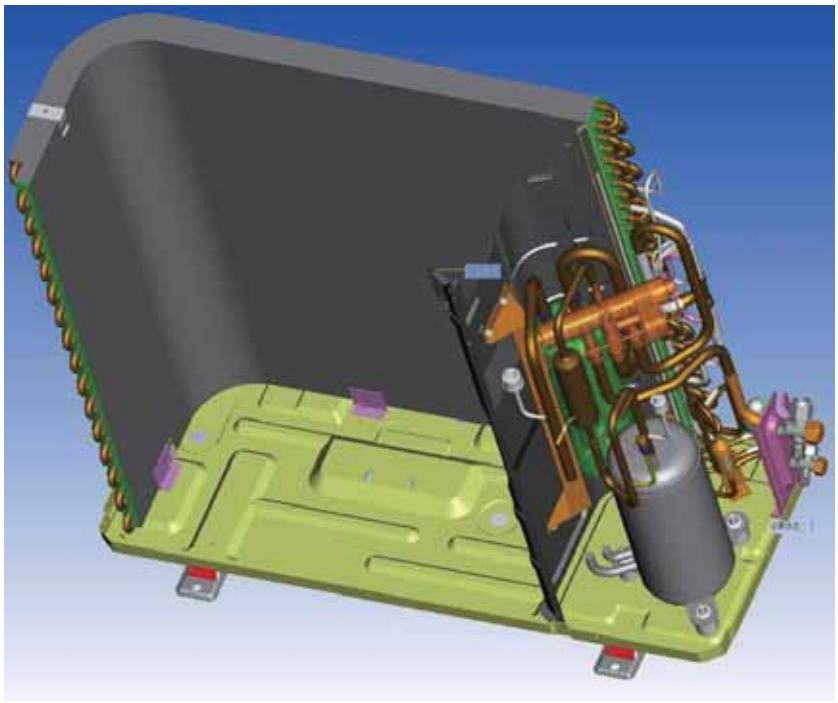


Fig.11

①. Remove gas valve

- Loosen the bolts fixing the gas valve.
- Welding out the pipe connected to the gas valve [**See Fig.12**]

Note: When welding, the valve should be covered by wet cloth in order to avoid the high temp damage.

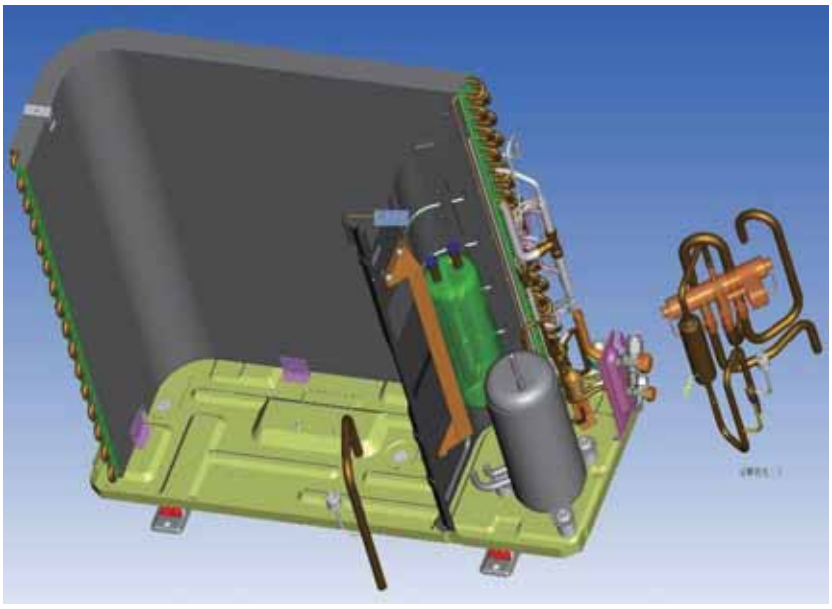


Fig.12

②. Remove liquid valve
- Loosen the bolts fixing the liquid valve.
- Unsolder the pipe connected to the liquid valve [**See Fig.13**]

Note: When welding, the valve should be covered by wet cloth in order to avoid the high temp damage.

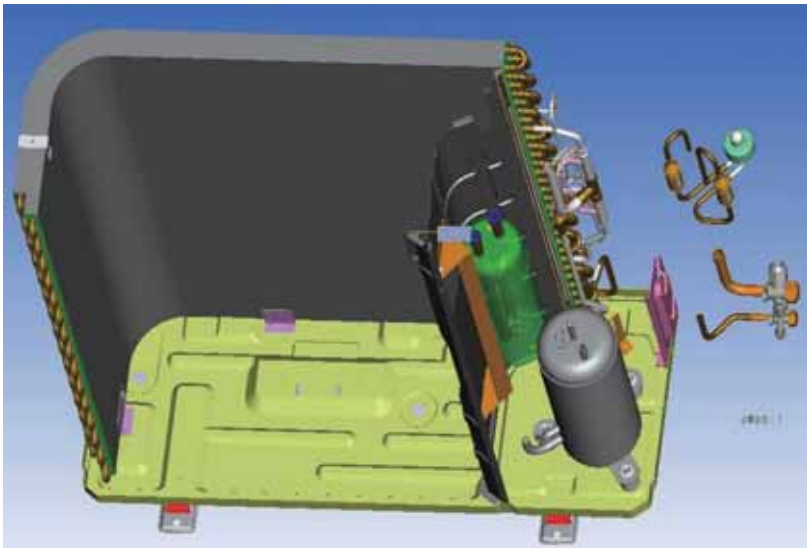


Fig.13

9) **Remove compressor and gas-liquid separator**
- Remove the connection wire of compressor
- Unsolder the suction pipe and discharge pipe.
- Loosen the bolts fixing the compressor and remove the compressor and gas-liquid separator. [**See Fig.13**]

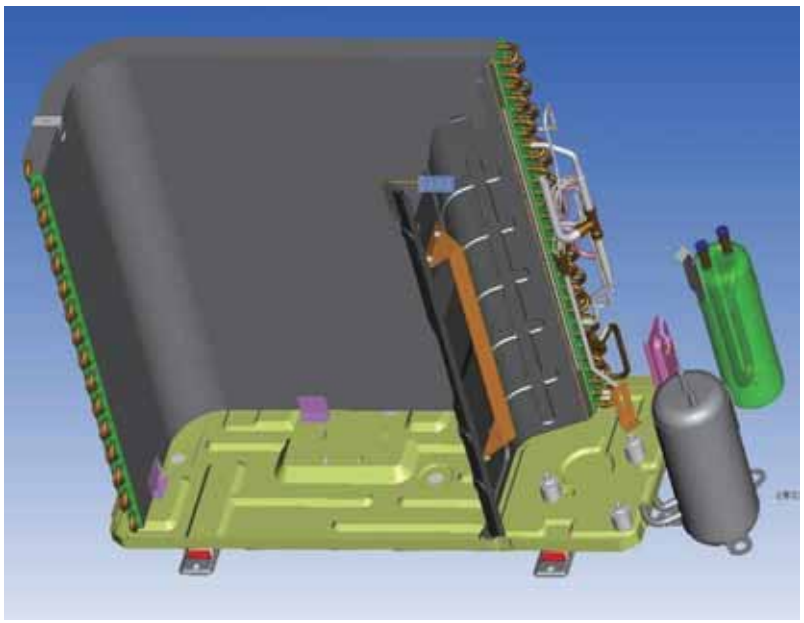


Fig.14

OutdooUnit : GRS-CQ12Pd/Na-K(O), GRS-CQ14Pd/Na-K(O), GRS-CQ16Pd/Na-K(O), GRS-CQ12Pd/Na-M(O), GRS-CQ14Pd/Na-M(O), GRS-CQ16Pd/Na-M(O), GRS-CQ16Pd/Na-H(O)

1) **Remove the cover.front side plate l and right side plate.**

● Loosen the two tapping screws, and remove the cover, the front side plate and right side plate.[**Fig. 2**]

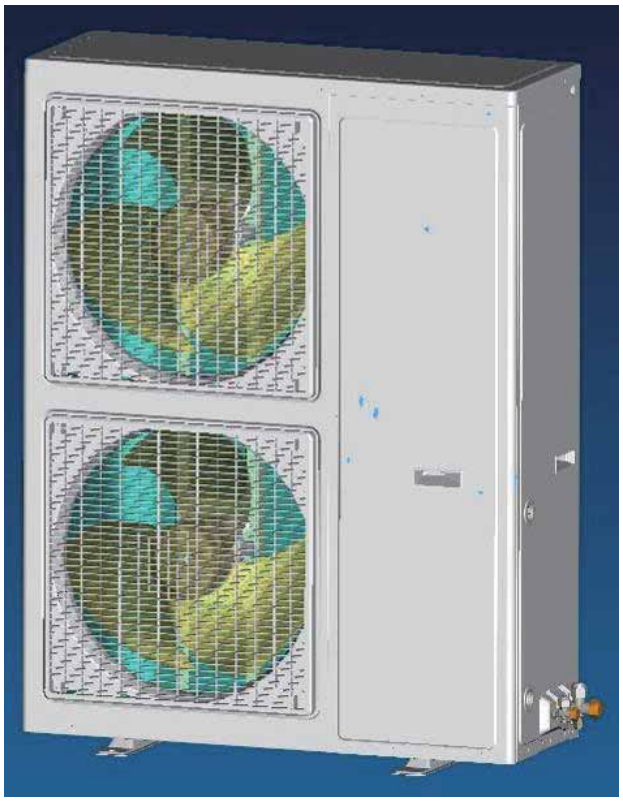


Fig. 1

Fig. 2

Fig. 3

2) **Remove the Cabinet**.
● Loosen the two tapping screws, and remove the Cabinet. [**See Fig. 3**]

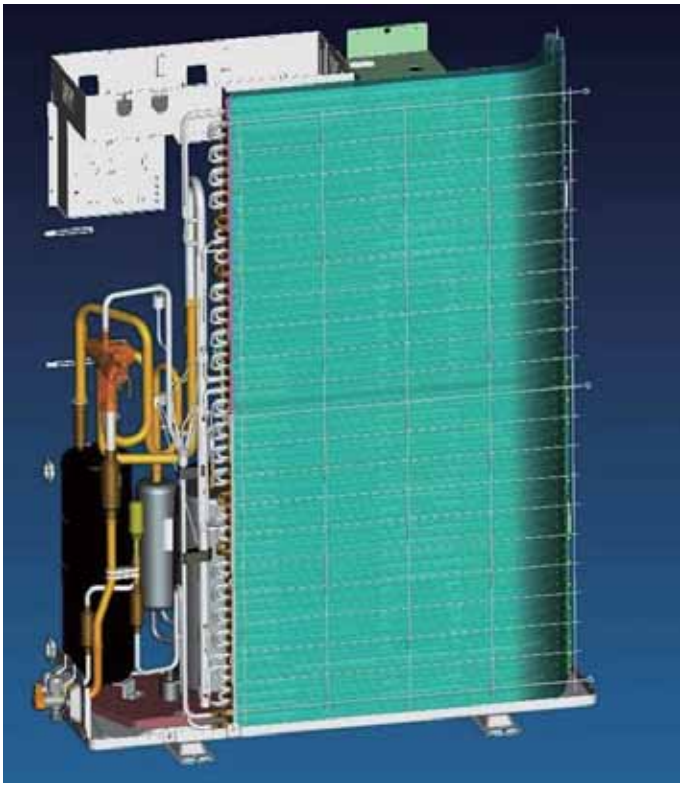


Fig. 4

3) Remove the Rear Grill
· Loosen the two tapping screws, and remove the Rear Grill.[See Fig.5]

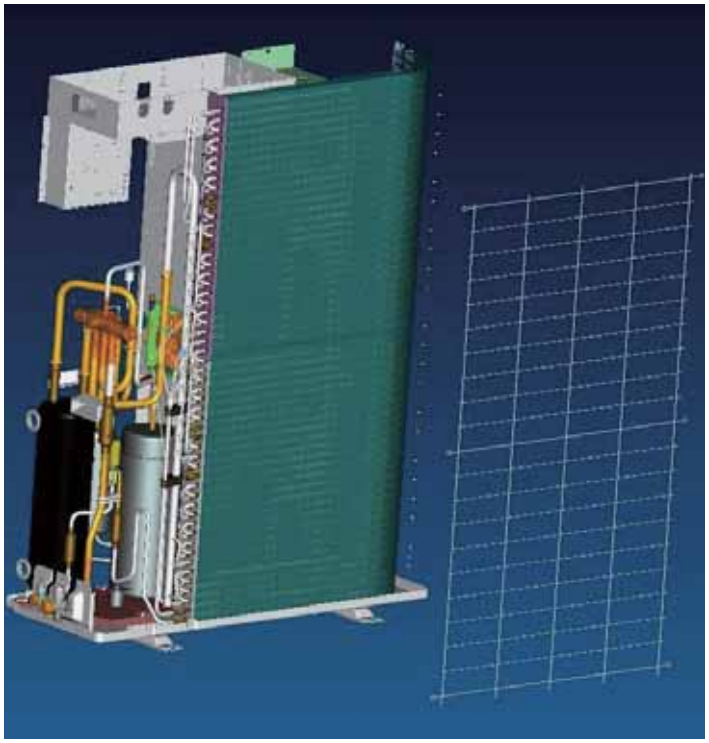


Fig.5

4) **Remove the Electric Box Assy**
● Loosen the two tapping screws, and remove the electric box assy .[**See Fig. 8**]

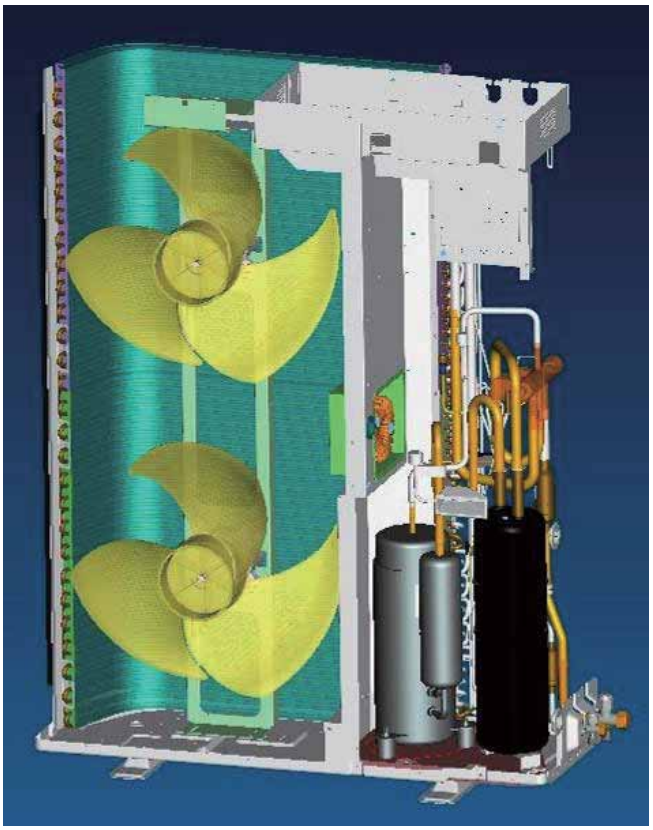


Fig.7

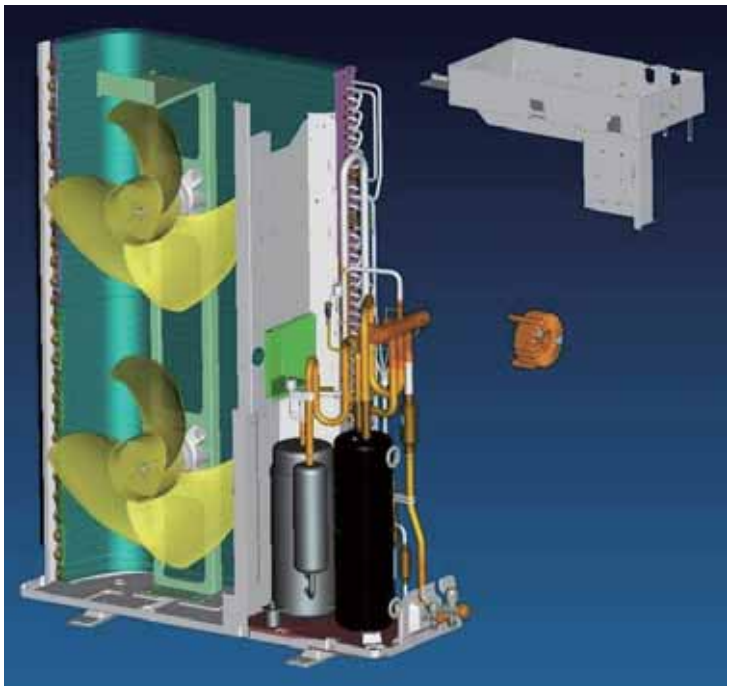


Fig.8

6) **Remove the axial fan**

● Loosen the ball nuts , and remove the axial fan. [**See Fig. 9**]

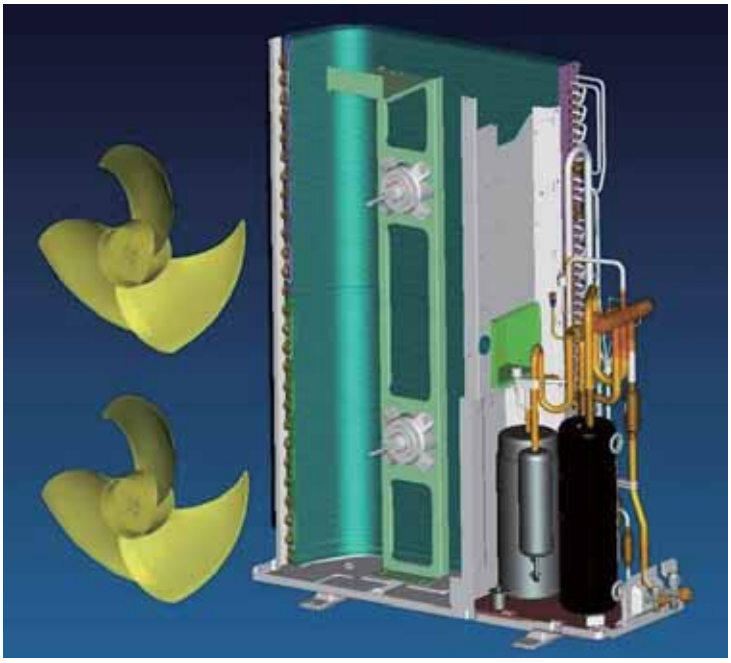


Fig. 9

7) **Remove the motor**

- Loosen the screws fixing the motor support.
- Remove the motor support. Loosen the wire of motor, and pull it through the hole. Remove the motor. [**See Fig. 10**]

Fig.10

8) **Remove the 4-way valve**

- Loosen the screws fixing the coil of 4-way valve.
- Remove the coil of 4-way valve.
- Unsolder the tubes connected to the 4-way valve.
- Remove the 4-way valve.[See Fig.11]

Note: When welding, the valve should be covered by wet cloth in order to avoid the high temp. damage.

Fig.11

①. **Remove gas valve**

● Loosen the bolts fixing the gas valve.

● Welding out the pipe connected to the gas valve [**See Fig.12**]

Note: When welding, the valve should be covered by wet cloth in order to avoid the high temp hurt.

②.**Remove liquid valve**

● Loosen the bolts fixing the liquid valve.

● Welding out the pipe connected to the liquid valve [**See Fig.12**]

Note: When welding, the valve should be covered by wet cloth in order to avoid the high temp hurt.

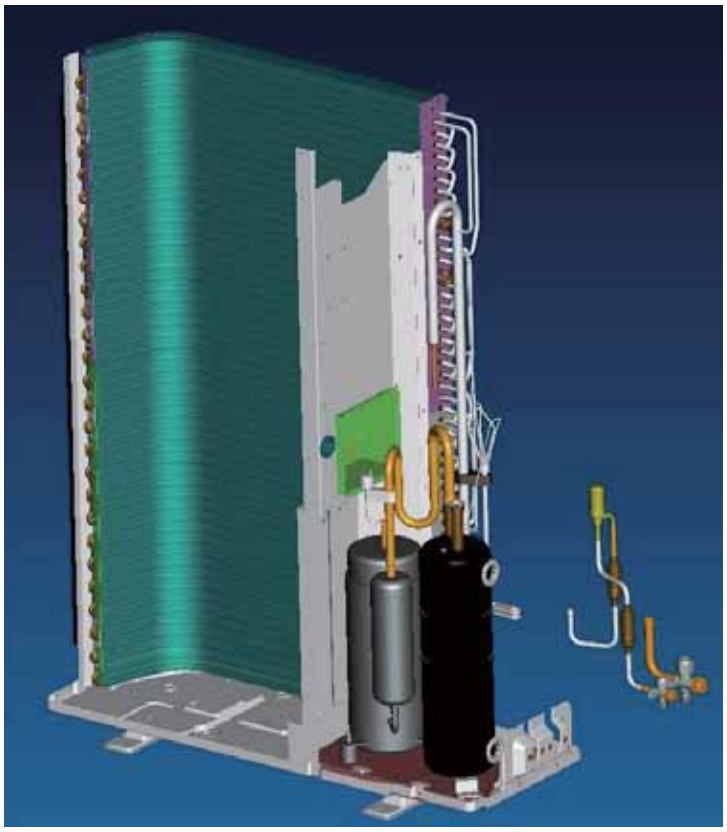


Fig.12

9) **Remove compressor and gas-liquid separator**

● Remove the connection wire of compressor.[**See Fig.13**]

● Welding out the suction pipe and discharge pipe.[**See Fig.14**]

● Loosen the bolts fixing the compressor and Remove the compressor and gas-liquid separator.

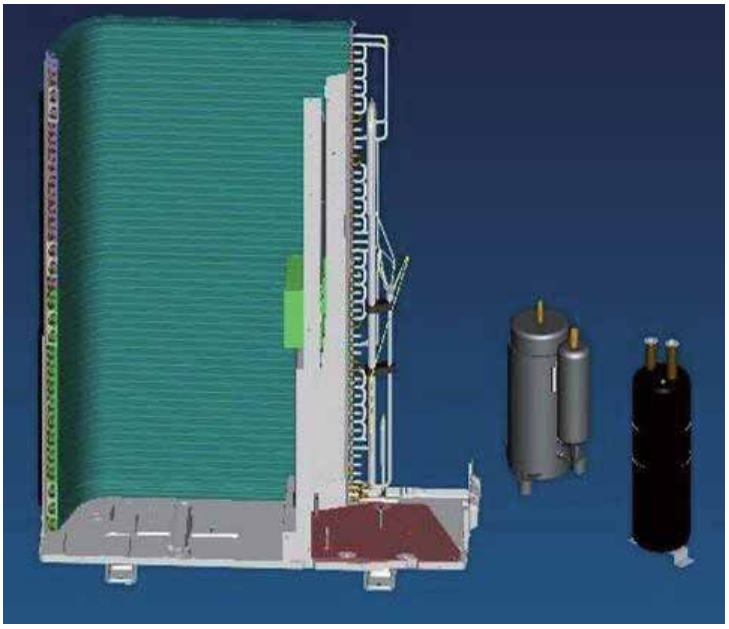


Fig.13

Fig.14

Indoor Unit

Fig. 1

1) **Front panel assy** [**Fig. 2**]

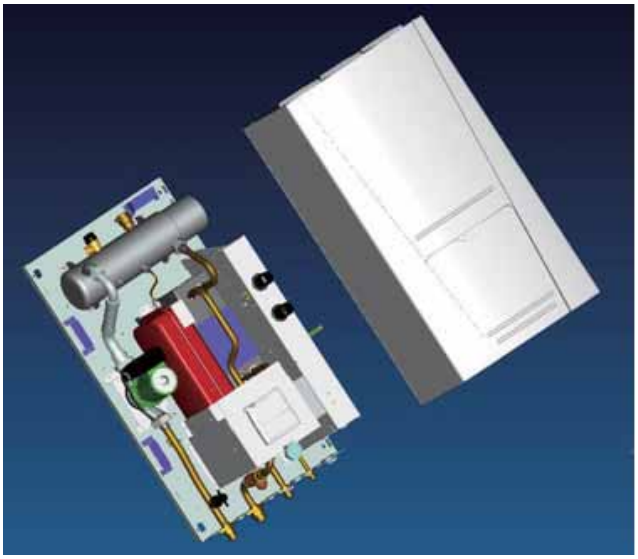


Fig. 2

2) **Electric box assy** [**Fig. 3**]

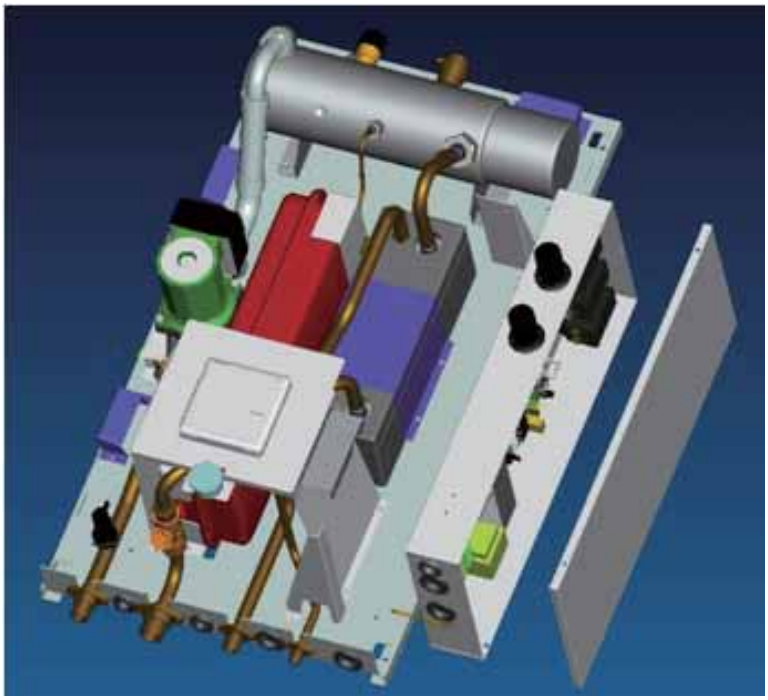


Fig. 3

3) **Water pump and water flow switch** [**See Fig.4**]
Note:GRS-CQ16Pd/Na-H(I) is not equipped with the water pump.

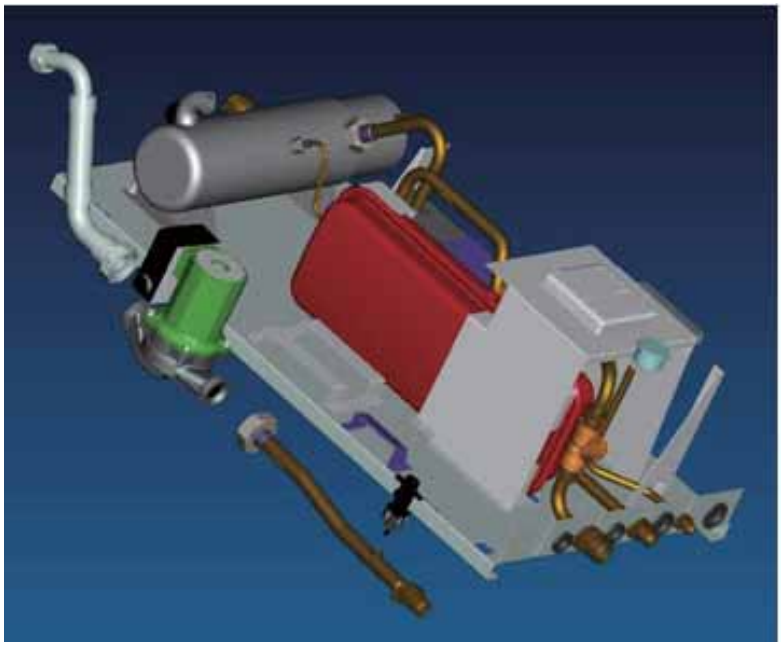
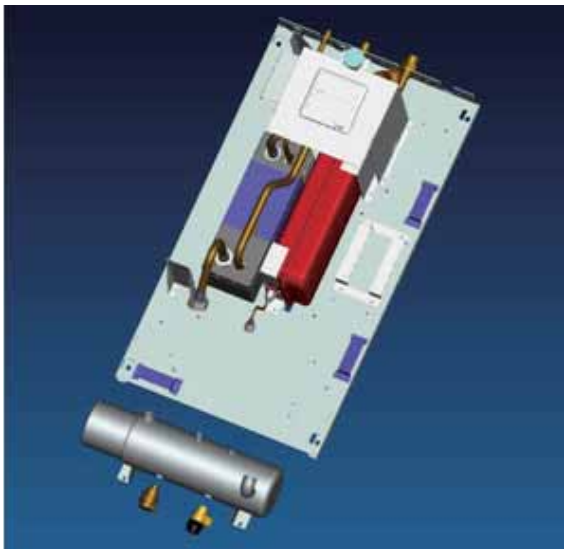
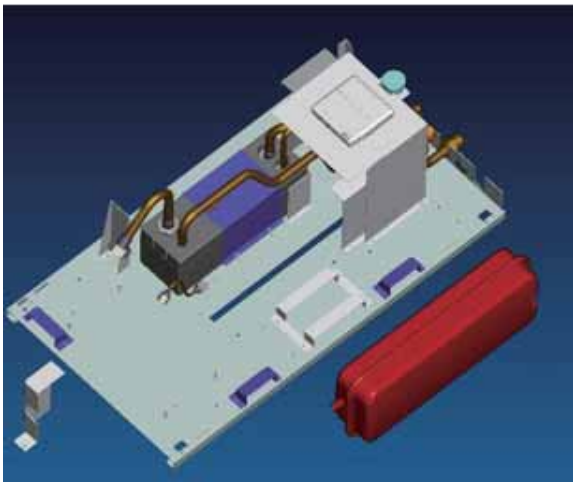
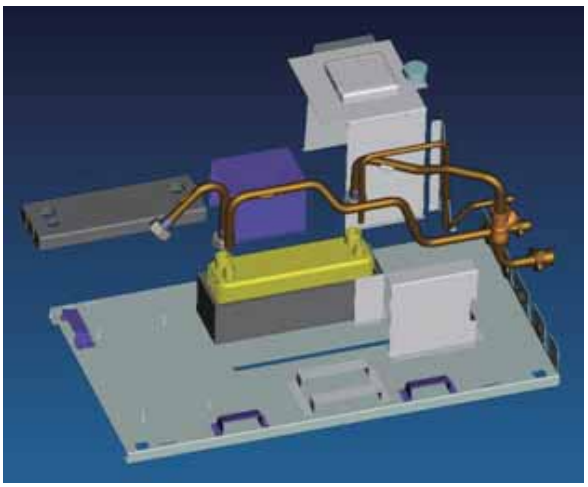


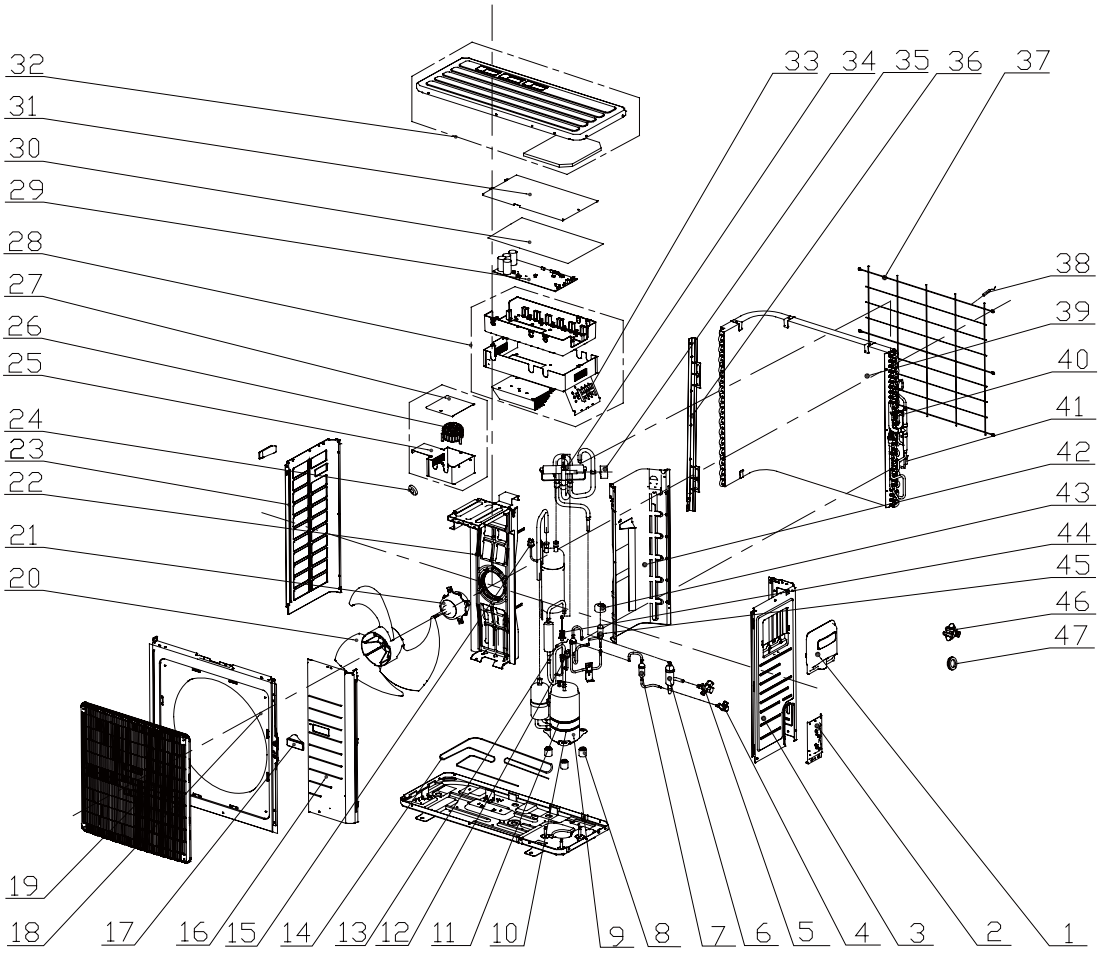
Fig. 4

4) **Electric heater, automatic air outlet valve and relieve valve [See Fig.5] (joint of pressure gauge for capillary shall be removed)**	 Fig.5
5) **Expansion tank [See Fig. 6]**	 Fig.6
6) **Plate-type heat exchanger [See Fig. 7]**	 Fig. 7

5 EXPLODED VIEWS AND PART LIST

5.1 Outdoor Exploded View and Part List

● Exploded View of GRS-CQ6.0Pd/Na-K(O):

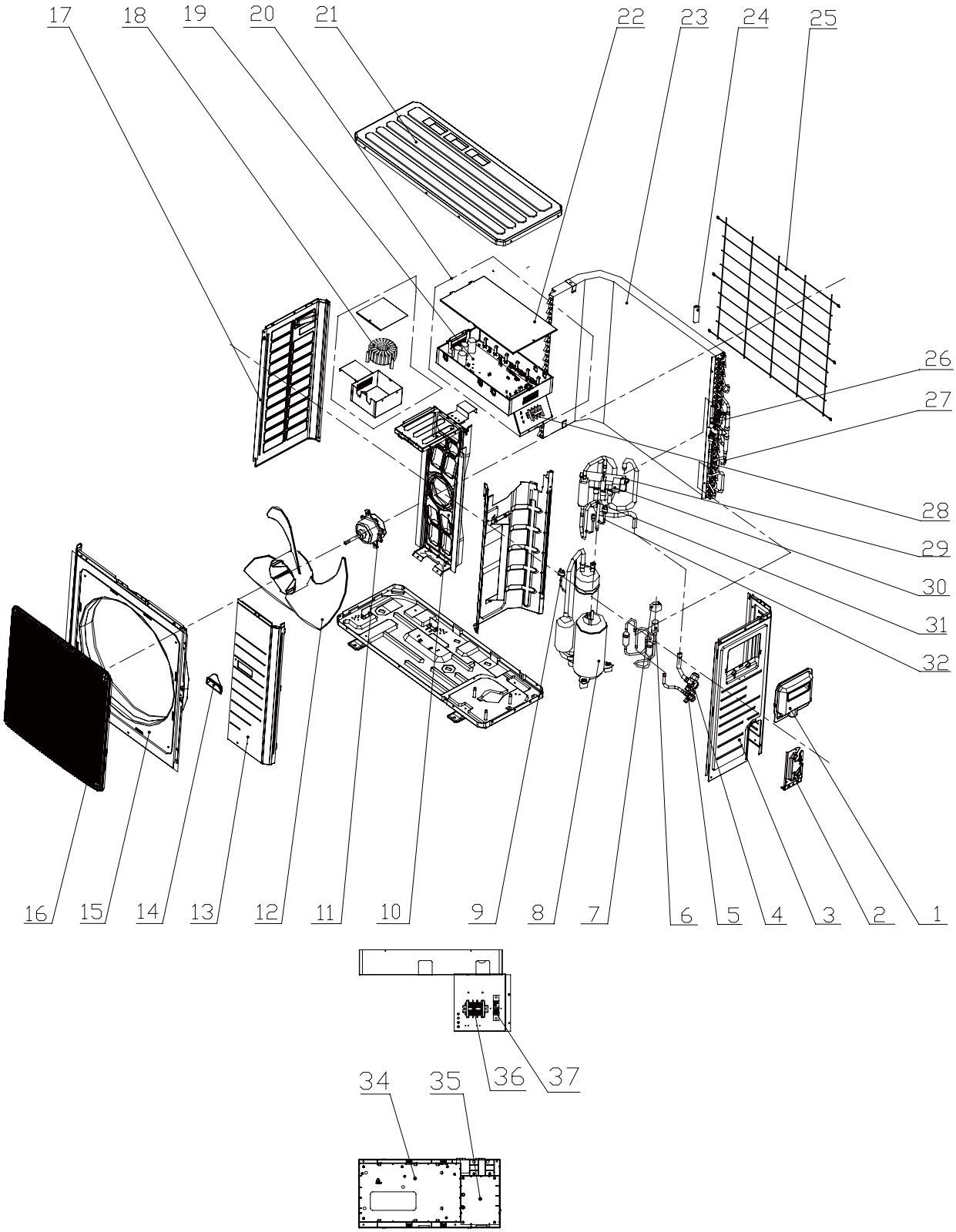


● Parts List of GRS-CQ6.0Pd/Na-K(O) for ER010W1050

No.	Name of part	Part code	Quantity
1	Big Handle	26235001	1
2	Valve Support Sub-Assy	0171311501P	1
3	Right Side Plate	01305044P	1
4	Cut-off Valve	07130239	1
5	Cut-off Valve	071302392	1
6	Strainer	07210032	1
7	Strainer	07220019	2
8	Compressor Gasket	76710207	3
9	Compressor and Fittings	00105036	1
10	Electrical Heater	76518732	1
11	Electrical Heater	76513006	1
12	Pressure Protect Switch	46020006	1
13	Temperature Sensor	3900028010	1
14	Electrical heater (Chassis)	765100041	1
15	Pressure Protect Switch	46020007	1
16	Front Side Plate	01305072P	1
17	Left Handle	26235401	2
18	Cabinet	01435004P	1
19	Front Grill	22415003	1
20	Axial Flow Fan	10335005	1
21	Fan Motor	15702802	1
22	Motor Support Sub-Assy	01802876	1
23	Left Side Plate	01305043P	1
24	Magnetic Ring	49010109	1
25	Electric Box Sub-Assy	01395787	1
26	PFC Inductance	43128003	1
27	Electric Box Cover	01425279	1
28	Electric Box Assy	01392879	1
29	Main Board	30223316	1
30	Insulated board (cover of electric box)	20113003	1
31	Electric Box Cover	01425281	1
32	Top Cover Sub-Assy	01255007	1
33	Terminal Board	42011242	1
34	4-way Valve	43000338	1
35	Magnet Coil	4300040029	1
36	Condenser Support Plate	01175037	1
37	Rear Grill	01475008	1
38	Temperature Sensor	3900028010	1
39	Condenser Assy	01122816	1

40	Temperature Sensor	3900028010	1
41	Temperature Sensor	39008054	1
42	Clapboard	01245237	1
43	Electric expand valve fitting	4300010822	1
44	Sensing Device	322101031	1
45	Electronic Expansion Valve	07334194	1
46	Drainage Connecter	06123401	1
47	Drainage Plug	06813401	3

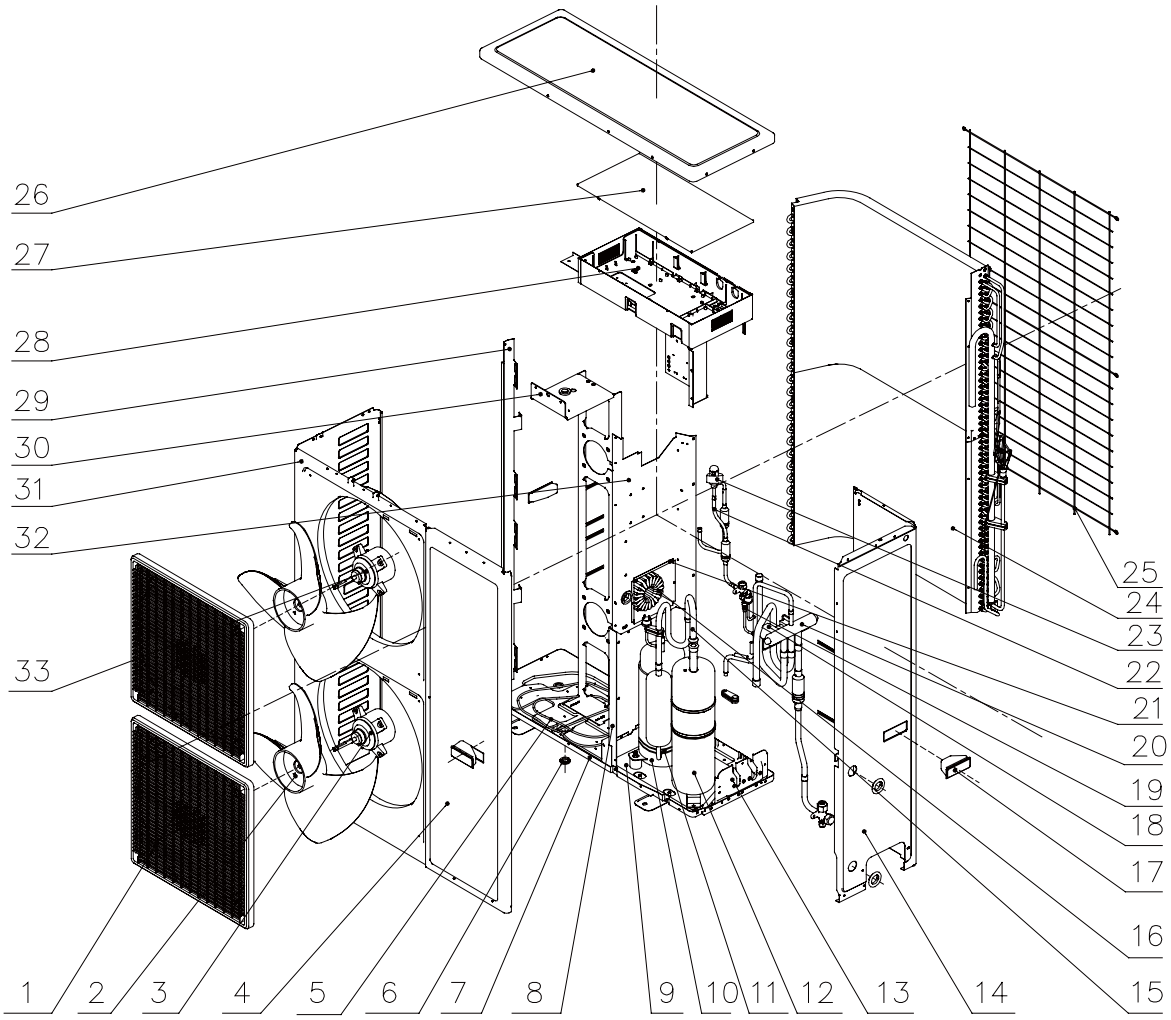
● Exploded View of GRS-CQ8.0Pd/Na-k(O) and GRS-CQ10Pd/Na-K(O):



● Parts List of GRS-CQ8.0Pd/Na-k(O) for ER010W1040 and GRS-CQ10Pd/Na-K(O) for ER010W1000

No.	Name of part	Part code	Quantity
1	Big Handle	26235001	1
2	Valve Support Sub-Assy	01715012P	1
3	Right Side Plate	01305044P	1
4	Cut-off Valve 5/8	07133157	1
5	Cut-off Valve 3/8	071302391	1
6	Electric Expansion Valve	07334193	1
7	Electronic Expansion Valve loop	4300010818	1
8	Compressor and Fittings	00205275	1
9	Pressure Protect Switch	46020007	1
10	Motor Support Sub-Assy	01802876	1
11	Fan Motor	15702802	1
12	Axial Flow Fan	10335005	1
13	Front Side Plate	01305072P	1
14	Left Handle	26235401	2
15	Cabinet	01435004P	1
16	Front Grill	22415003	1
17	Left Side Plate	01305043P	1
18	PFC Inductance	43128003	1
19	Main Board	30223315	1
20	Electric Box Assy	01392863	1
21	Top Cover Sub-Assy	01255007	1
22	Electric Box Cover	01425281	1
23	Condenser Assy	01122816	1
24	Temperature Sensor	3900028010	1
25	Rear Grill	01475008	1
26	Temperature Sensor	39008054	1
27	Temperature Sensor	39008054	1
28	Terminal Board	42011242	1
29	4-way Valve	43000338	1
30	Magnet Coil	4300040029	1
31	Temperature Sensor	39008054	1
32	Pressure Protect Switch	46020006	1

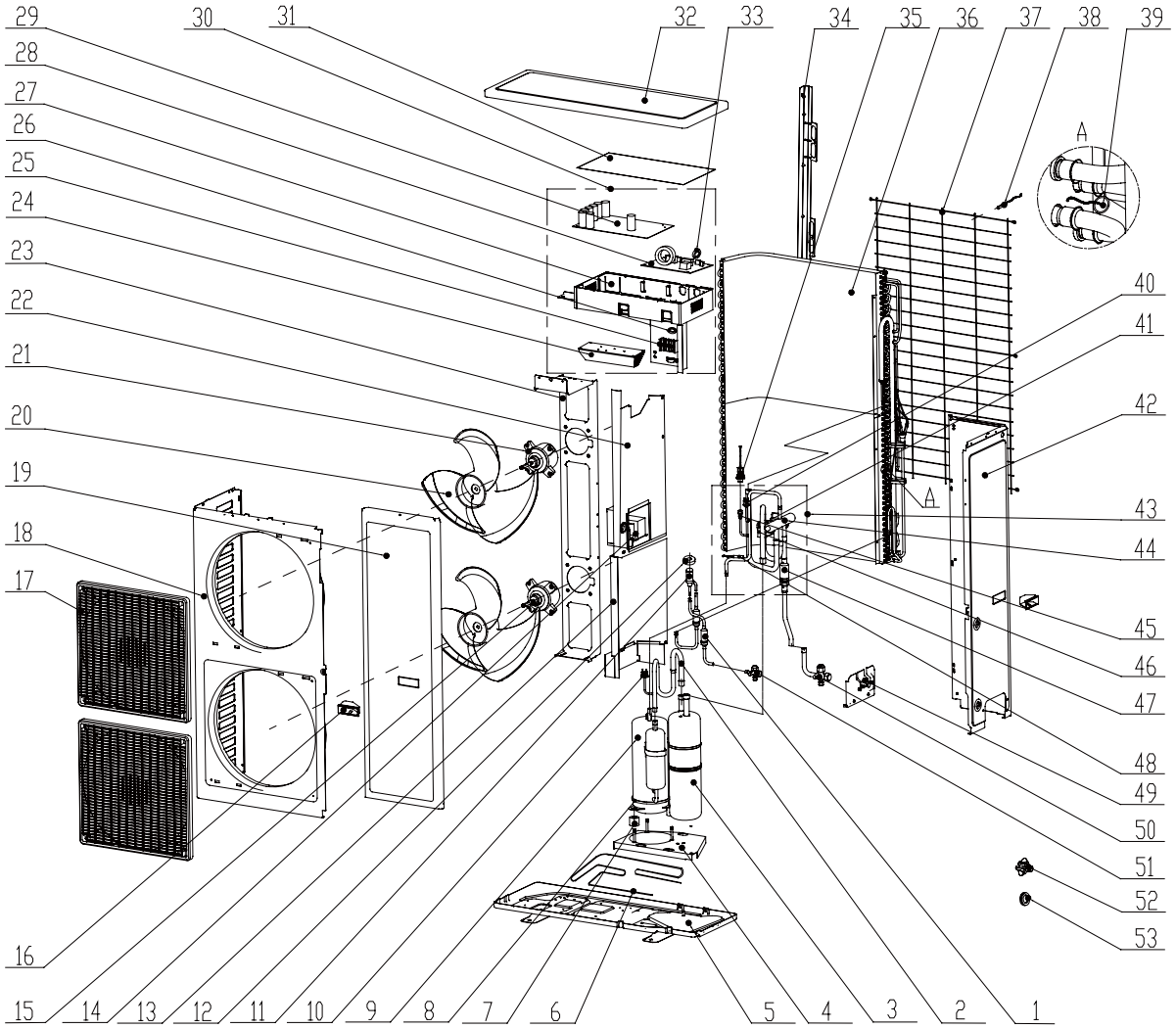
● Exploded View of GRS-CQ12Pd/Na-K(O),GRS-CQ14Pd/Na-K(O) and GRS-CQ16Pd/Na-K(O)



● Parts List of GRS-CQ12Pd/Na-K(O) for ER010W1020, GRS-CQ14Pd/Na-K(O) for ER010W1030, and GRS-CQ16Pd/Na-K(O) for ER010W1010

No.	Name of part	Part code	Quantity
1	Front grill	22414102	2
2	Axial Flow Fan	10338731	2
3	Fan Motor	15704115	1
4	Front Side Plate Sub-Assy	1305430	1
5	Electrical heater (Chassis)	765100041	1
6	Drainage Plug	6813401	3
7	Chassis Sub-assy	1192820	1
8	Clapboard Sub-Assy 1	1242808	1
9	Compressor support sub-assy	01805295P	1
10	Compressor and fittings	00205224	1
11	electrical heater	765152123	1
12	Gas-liquid Separato	7425216	1
13	Valve Support Sub-Assy	1715001	1
14	Rear Side Plate Sub-Assy	01314171P	1
15	Inhalation Tube Sub-Assy	4675328	1
16	Inductance	43120122	1
17	Handle	26235253	3
18	Magnet Coil	4300040029	1
19	Sensor (High pressure)	322101032	1
20	4-way Valve Sub-Assy	4142823	1
21	Inductance Box	1424173	1
22	Electric Expansion Valve Sub-Assy	7332826	1
23	Electric expand valve fitting	4300010822	1
24	Condenser Assy	1122817	1
25	Rear Grill	1475432	1
26	Top Cover	1255262	1
27	Electric Box Cover	1424235	1
28	Electric Box Assy	1392862	1
29	Condenser support sub-assy	1894119	1
30	Motor Support Sub-Assy	1804318	1
31	Cabinet	1435436	1
32	Clapboard Sub-Assy 2	1244136	1
33	Fan Motor	1570411501	1
34	Main Board	30223313	1
35	Filter Board	30228115	1
36	Terminal Board(3 bit)	42011242	1
37	Breaker	46020018	1

● Exploded View of GRS-CQ12Pd/Na-M(O),GRS-CQ14Pd/Na-M(O) and GRS-CQ16Pd/Na-M(O):



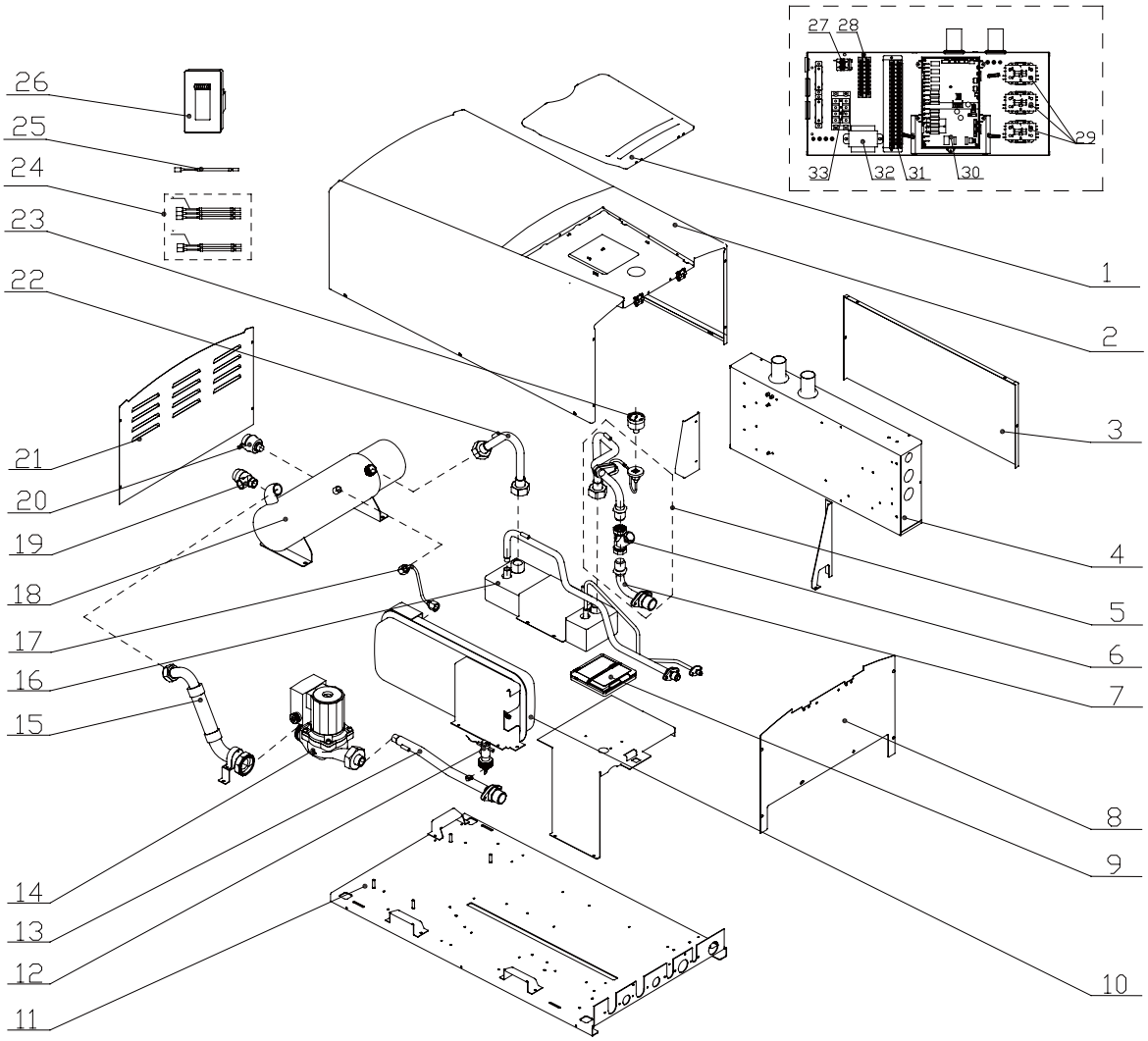
● Parts List of GRS-CQ12Pd/Na-M(O) for ER010W1060, GRS-CQ14Pd/Na-M(O) for ER010W1070 and GRS-CQ16Pd/Na-M(O) for ER010W1080,GRS-CQ16Pd/Na-H(O) for ER010W1090

No.	Name of part	Part code	Quantity
1	Bidirection Strainer	07220016	2
2	Inhalation Tube Sub-Assy	04675328	1
3	Gas-liquid Separator	07425216	1
4	Compressor support sub-assy	01805295P	1
5	Chassis Sub-assy	01192820P	1
6	Electrical heater (Chassis)	765100041	1
7	Compressor Gasket	76815204	3
8	electrical heater	765152123	1
9	Compressor and fittings	00204126	1
10	Pressure Protect Switch	46020007	1
11	Electronic Expansion Valve	07334309	1
12	Electric expand valve fitting	4300010812	1
13	Clapboard Sub-Assy	01242808	1
14	Reactor	43130161	1
15	Fan Motor	1570411501	1
16	Handle	26235253	3
17	Front grill	22414102	2
18	Cabinet	01435436	1
19	Front Side Plate Sub-Assy	01305430	1
20	Axial Flow Fan	10338731	2
21	Fan Motor	15704115	1
22	Clapboard Sub-Assy	01244136	1
23	Motor Support Sub-Assy	01804318	1
24	Radiator	49018028	1
25	Terminal Board	42011257	1
26	Magnetic Ring	49010104	2
27	Electric Box Assy 1	26904131	1
28	Filter Board	30228118	1
29	Main Board	30228805	1
30	Electric Box Assy	01392880	1
31	Electric Box Cover	01424235	1
32	Top Cover	01255013P	1
33	Magnetic Ring	49010109	1
34	Condenser support sub-assy	01894119	1
35	Sensor (High pressure)	322101032	1
36	Condenser Assy	01122820	1
37	Rear Grill	01475432	1
38	Temperature Sensor	3900028002	1

39	Temperature Sensor	3900028002	1
40	Pressure Protect Switch	46020006	1
41	Magnet Coil	4300040031	1
42	Rear Side Plate Sub-Assy	01314171P	1
43	4-way Valve Sub-Assy	04142823	1
44	4-way Valve	43000338	1
45	Nozzle for Adding Freon	06120012	1
46	Temperature Sensor	3900805401	1
47	Strainer	07210037	1
48	Temperature Sensor	3900028002	1
49	Valve Support Sub-Assy	01715001	1
50	Gas Valve Sub-Assy	07103030	1
51	Cut-off Valve	071302391	1
52	Drainage Connecter	06123401	1
53	Drainage Plug	06813401	3

5.2 Indoor Exploded View and Part List

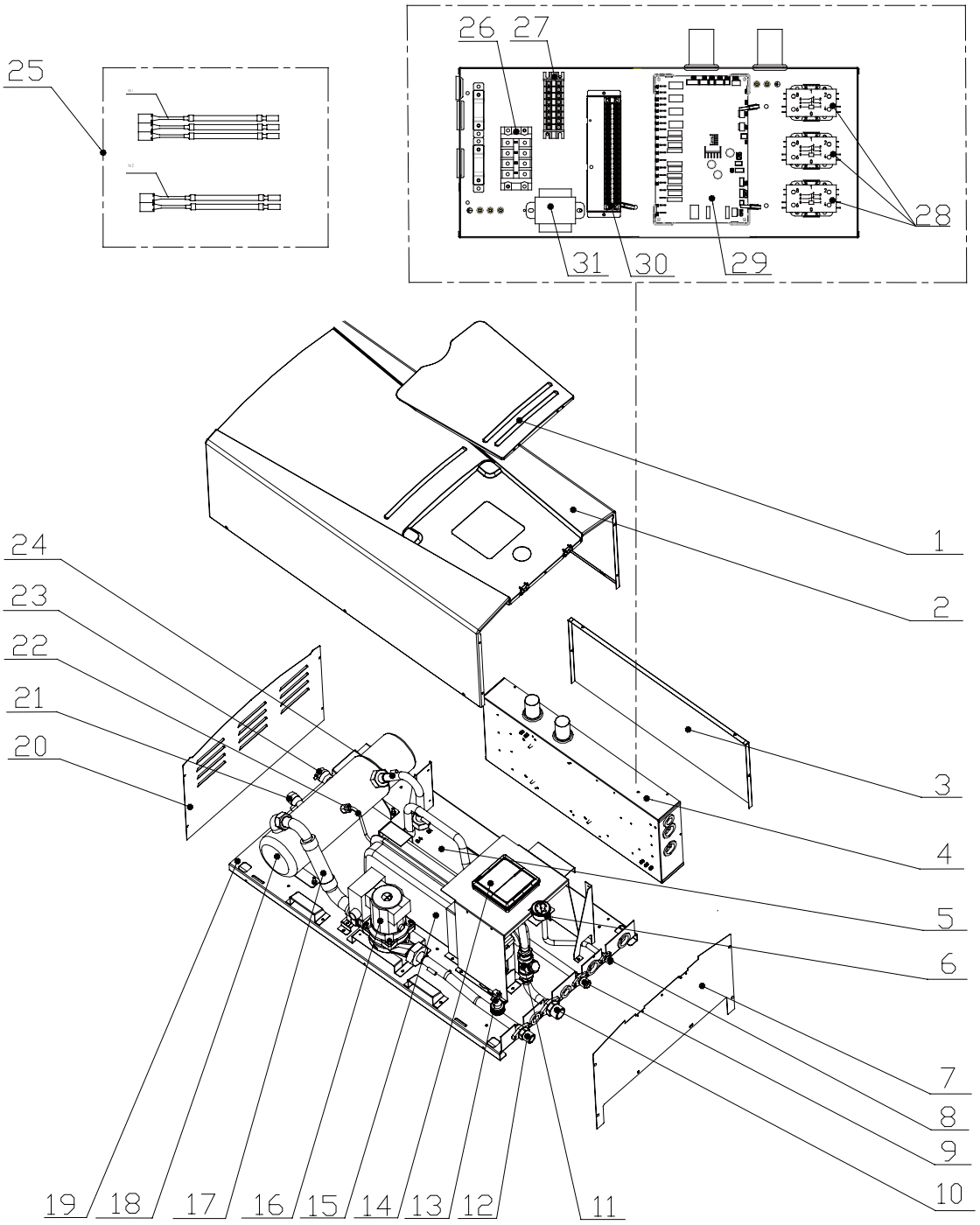
- Exploded View of GRS-CQ6.0Pd/Na-K(I):



● Parts List of GRS-CQ6.0Pd/Na-K(I) for ER010N1050

No.	Name of part	Part code	Quantity
1	Front Panel Cover	01262866	1
2	Front Panel	01542808	1
3	Electric Box Cover	01422821	1
4	Electric Box Assy	01392864	1
5	Enter Water Pipe Sub-Assy	04362891	1
6	Strainer	07412808	1
7	Pipe of "L" shape	05022909	1
8	Bottom Cover Plate	01262876	1
9	Display Board	30293301	1
10	Expansion Drum	07422804	1
11	Chassis Sub-assy	01192819	1
12	Water Flow switch Sub-Assy	45028062	1
13	Outlet Water Pipe Sub-Assy	04362888	1
14	Water Pump	43138221	1
15	Outlet Water Pipe Sub-Assy	04362917	1
16	Plate-type Heat Exchanger	00902813	1
17	Connection Pipe Sub-assy	05032851	1
18	Electric Heater	32000003	1
19	Relief Valve	07382814	1
20	Auto Air Outlet Valve	07108208	1
21	Top cover	01262875	1
22	Enter Water Pipe Sub-Assy	04362893	1
23	Water Pressure Gauge	49028009	1
24	Sensor sub-assy	39008051	1
25	Temperature Sensor	39000283	1
26	Receiver Board	30261014	1
27	Thermostat	45048006	1
28	Terminal Board	4201120401	1
29	AC Contactor	44010221	3
30	Main Board	30223311	1
31	Terminal Board	42011254	1
32	Transformer	4311027001	1
33	Terminal Board	42011051	1

● Exploded View of GRS-CQ8.0Pd/Na-K(I) ,GRS-CQ10Pd/Na-K(I),GRS-CQ12Pd/Na-K(I),GRS-CQ14Pd/Na-K(I) and GRS-CQ16Pd/Na-K(I):



● Parts List of GRS-CQ8.0Pd/Na-K(I) for ER010N1040, GRS-CQ10Pd/Na-K(I) for ER010N1000, GRS-CQ12Pd/Na-K(I) for ER010N1020, GRS-CQ14Pd/Na-K(I) for ER010N1030 and GRS-CQ16Pd/Na-K(I) for ER010N1010

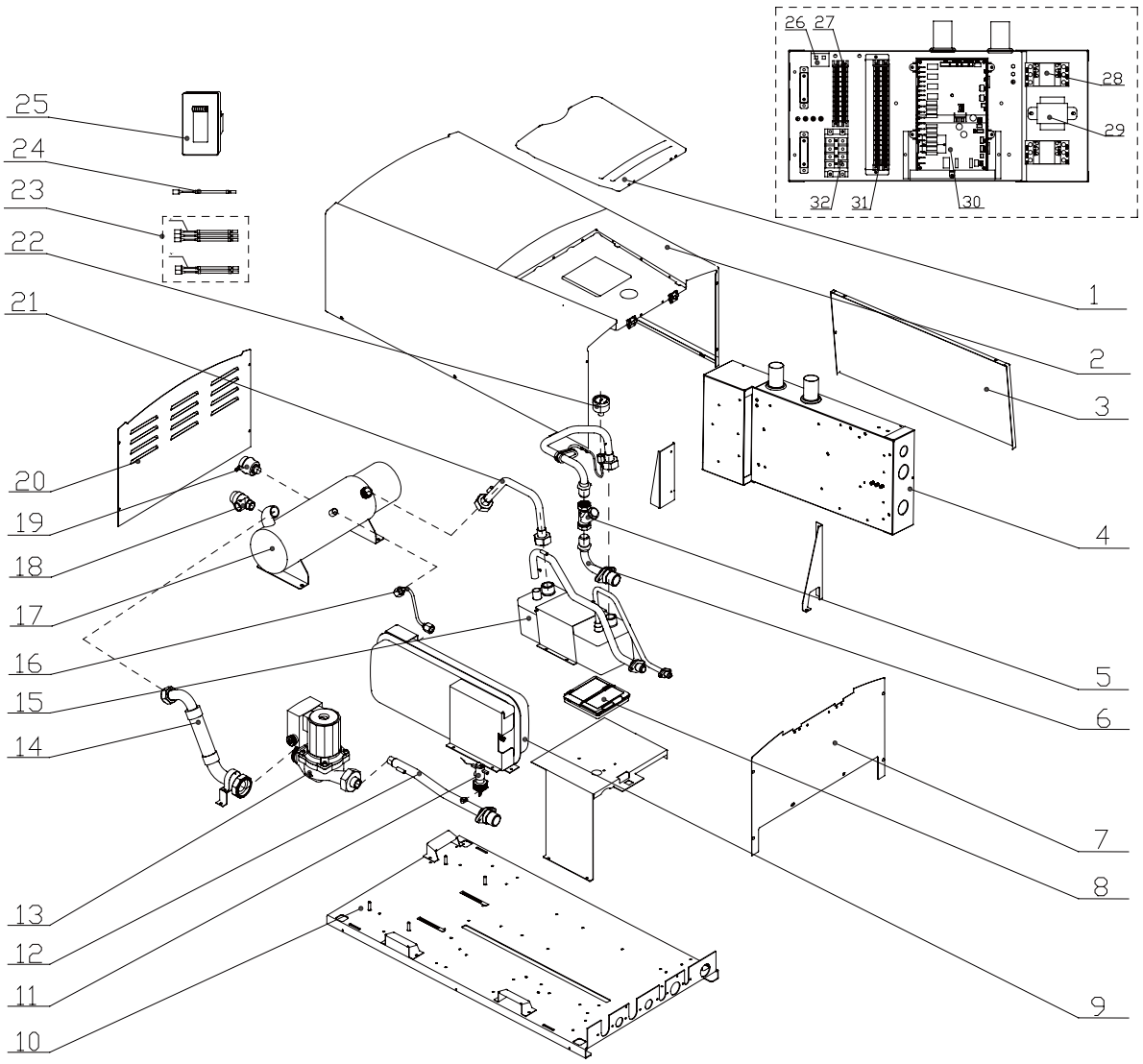
No.	Name of part	Part code	Quantity
1	Front Panel Cover	01262866P	1
2	Front Panel	1542808	1
3	Electric Box Cover	1422821	1
4	Electric Box Assy	1392864	1
5	Plate Heat Exchanger	00902811 ①	1
		00902812 ②	1
6	Water Manometer	49028003	1
7	Bottom Cover Plate	1262876	1
8	Outlet Gas Pipe Sub-Assy	4322857	1
9	Inlet Gas Pipe Sub-Assy	4322859	1
10	Inlet Water Pipe Sub-Assy	4362891	1
11	Filter	7412808	1
12	Outlet Water Pipe Sub-Assy	4362888	1
13	Flow Switch Sub-Assy	45028062	1
14	Display Board	30293301	1
15	Expansion Drum	7422804	1
16	Water Pump	43138221	1
17	Outlet Water Pipe Sub-Assy	4362917	1
18	Electric Heater	32102802	1
19	Chassis Sub-Assy	01192819P	1
20	Top Cover Plate	1262875	1
21	Relief Valve	7382814	1
22	Connecting Pipe Sub-Assy	5032851	1
23	Auto Air Outlet Valve	7108208	1
24	Inlet Water Pipe Sub-Assy	4362893	1
25	Sensor Sub-Assy	39008051	1
26	Terminal Board(4 bit)	42011051	1
27	Terminal Board(8 bit)	4201120401	1
28	AC Contactor	44010245	3
29	Main Board	30223311	1
30	Terminal Board(20 bit)	42011254	1
31	Transformer	4311027001	1

Note:

a. ① Only is used in ER010N1040 and ER010N1000.

b. ② Only is used in ER010N1020, ER010N1030, ER010N1010.

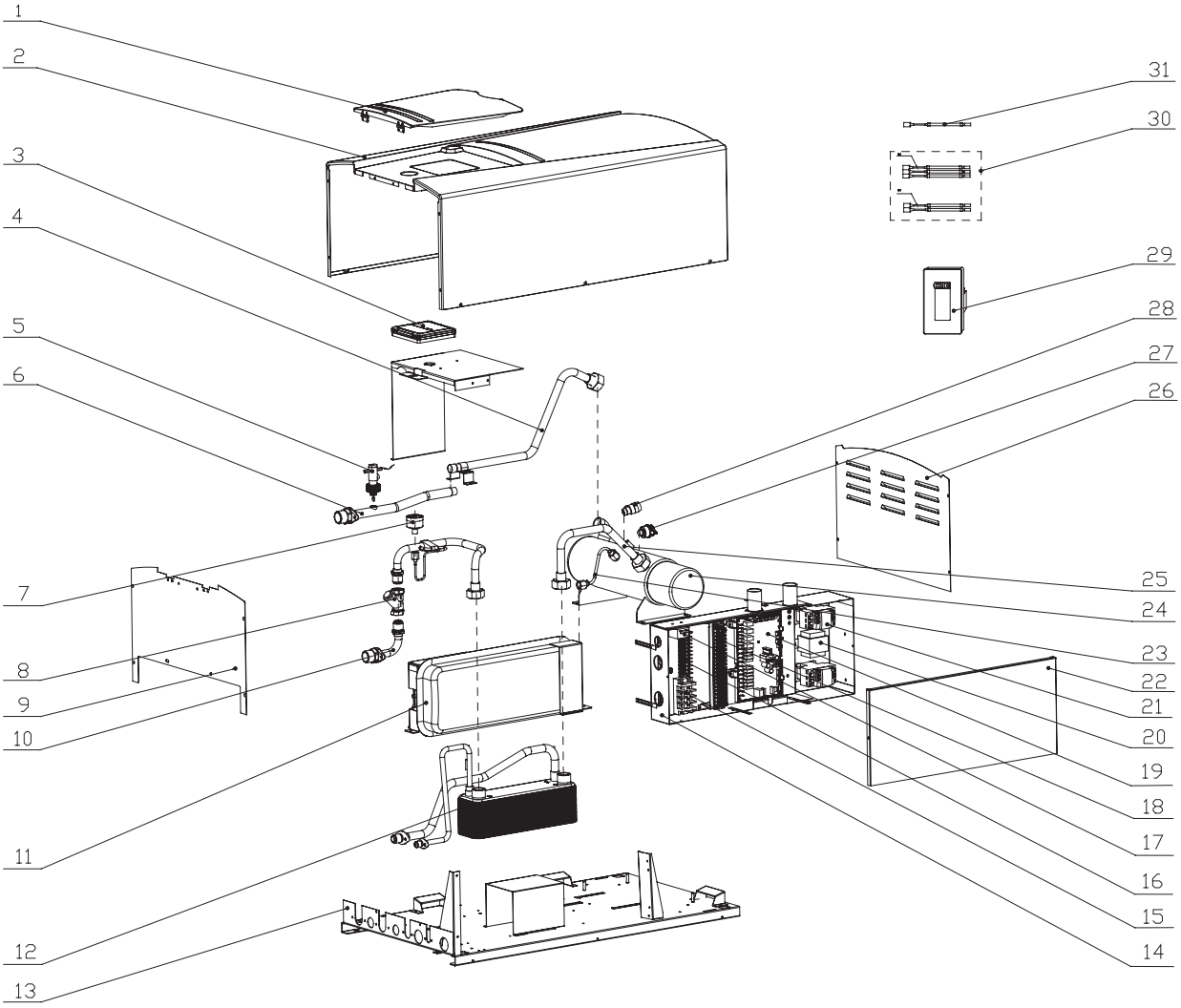
● Exploded View of GRS-CQ12Pd/Na-M(I), GRS-CQ14Pd/Na-M(I), GRS-CQ16Pd/Na-M(I):



● Parts List of GRS-CQ12Pd/Na-M(I) for ER010N1060, GRS-CQ14Pd/Na-M(I) for ER010N1070, GRS-CQ16Pd/Na-M(I) for ER010N1080

No.	Name of part	Part code	Quantity
1	Front Panel Cover	01262866P	1
2	Front Panel	01542808	1
3	Electric Box Cover	01422821	1
4	Electric Box Assy	01392864	1
5	Strainer	07412808	1
6	Pipe of "L" shape	05022909	1
7	Bottom Cover Plate	01262876	1
8	Display Board	30293301	1
9	Expansion Drum	07422804	1
10	Chassis Sub-assy	01192819P	1
11	Water Flow switch Sub-Assy	45028062	1
12	Outlet Water Pipe Sub-Assy	04362888	1
13	Water Pump	43138221	1
14	Outlet Water Pipe Sub-Assy	04362917	1
15	Plate-type Heat Exchanger	00902812	1
16	Connection Pipe Sub-assy	05032851	1
17	Electric heater	32000004	1
18	Relief Valve	07382814	1
19	Auto Air Outlet Valve	07108208	1
20	Top cover	01262875	1
21	Enter Water Pipe Sub-Assy	04362925	1
22	Water Pressure Gauge	49028009	1
23	Sensor sub-assy	39008051	1
24	Temperature Sensor	39000283	1
25	Receiver Board	30261014	1
26	Thermostat	45048006	1
27	Terminal Board	420102511	1
28	AC Contactor	44010232	2
29	Transformer	4311027001	1
30	Main Board	30223311	1
31	Terminal Board	42011254	1
32	Terminal Board	42011051	1

● Exploded View of GRS-CQ16Pd/Na-H(I):

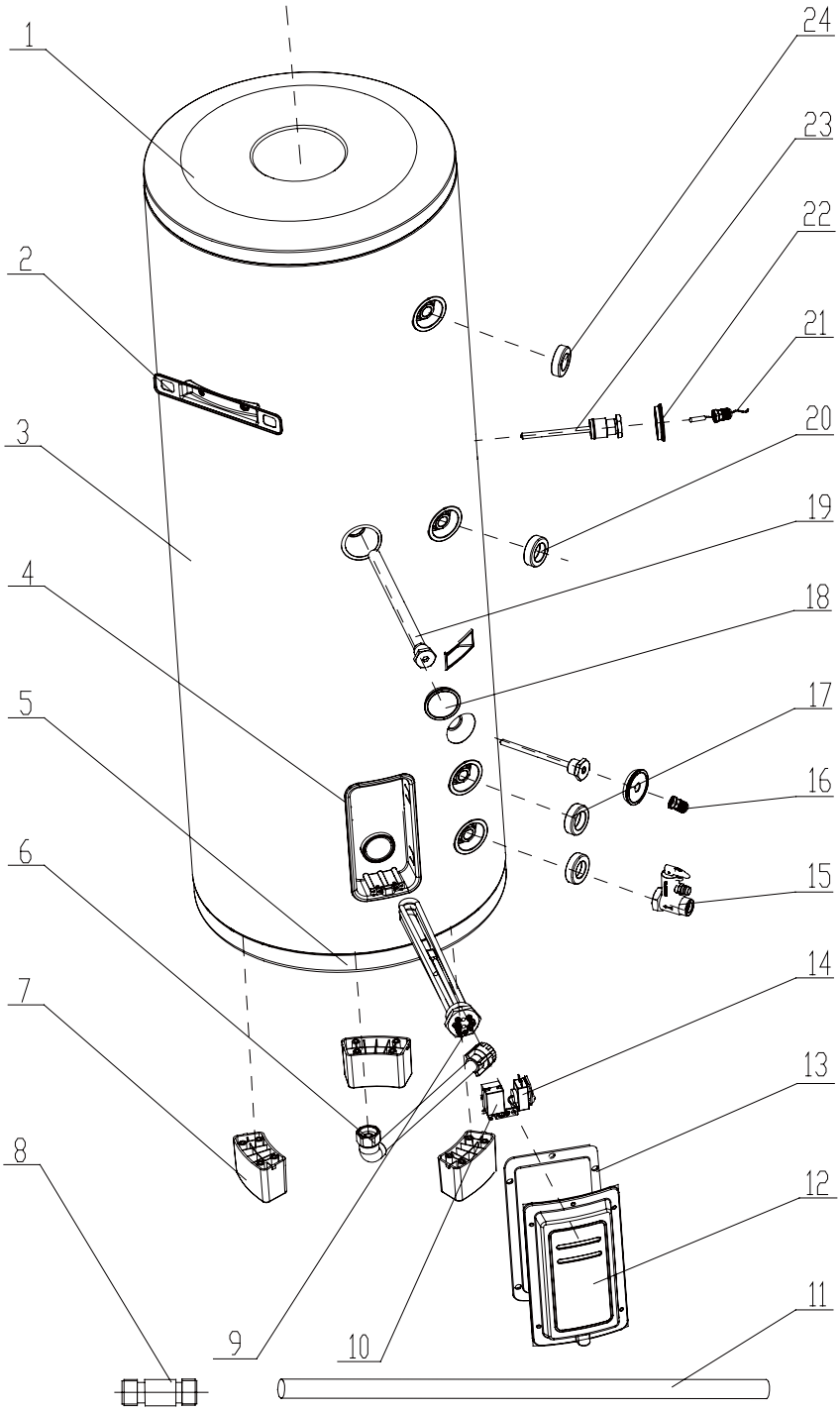


● Parts List of GRS-CQ16Pd/Na-H(I) for ER010N1090

No.	Name of part	Part code	Quantity
1	Front Panel Cover	01262866P	1
2	Front Panel	01542808	1
3	Display Board	30293301	1
4	Outlet Water Pipe Sub-Assy	04262800007	1
5	Water Flow Switch Sub-Assy	45028062	1
6	Outlet Water Pipe Sub-Assy	04262800005	1
7	Water Pressure Gauge	49028009	1
8	Strainer	07412808	1
9	Bottom Cover Plate	01262876	1
10	L-shaped Pipe	05022909	1
11	Expansion Drum	07422804	1
12	Plate-type Heat Exchanger	00902812	1
13	Chassis Sub-Assy	01192819P	1
14	Electric Box Assy	01392800016	1
15	Terminal Board	42011051	1
16	Terminal Board	420102511	1
17	Thermostat	45048006	1
18	Terminal Board	42010249	1
19	Main Board	30223311	1
20	Transformer	43110270	1
21	AC Contactor	44010232	2
22	Electric Box Cover	01422821	1
23	Connection Pipe Sub-Assy	05032851	1
24	Electric Heater	32000004	1
25	Entering Water Pipe Sub-Assy	04362925	1
26	Top cover	01262875	1
27	Auto Air Outlet Valve	07108208	1
28	Relief Valve	07382814	1
29	Receiver Board	30261014	1
30	Sensor Sub-Assy	39008051G	1
31	Temperature Sensor	39000283G	1

5.3 Water Tank Exploded View and Part List

- Exploded View of SXVD200LCJ/A-K, SXVD200LCJ/A-M,SXVD200LCJ/A-H, SXVD300LCJ/A-K,SXVD300LCJ/A-M and SXVD300LCJ/A-H:



● Parts List of SXVD200LCJ/A-K for ER20000160

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	01262801P	1
2	Fixation Bracket (Outside)	01802819P	1
3	Body Of Outdoor Unit	0151283301P	1
4	Electric Box Assy	01392865	1
5	Bottom Cover Plate	01262806P	1
6	Drainage Pipe Sub-Assy	04362821	1
7	Water Tank Base	01892825	3
8	Water Pipe Joint (accessory)	06652838	1
9	Electric Heater	32110008	1
10	Thermostat	45048005	1
11	Drainage hose	05230012	1
12	Electric Box Cover	26902805	1
13	Gasket	75042802	1
14	Thermostat	45048003	1
15	Relief Valve	07382801	1
16	Cable Cross Loop	765100267	2
17	Toggle Switch Sheath	26902823	1
18	Gasket	7041280401	1
19	Magnesium Sub-Assy	04162801	1
20	Toggle Switch Sheath	2690282301	1
21	Temperature Sensor	3900028302	1
22	Gasket	70412804	2
23	Temp Sensor Pipe Sub-Assy	04162802	2
24	Toggle Switch Sheath	26242801	2

● Parts List of SXVD200LCJ/A-M for ER20000240

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	01262801P	1
2	Fixation Bracket (Outside)	01802819P	1
3	Body Of Outdoor Unit	0151283301P	1
4	Electric Box Assy	01392885	1
5	Bottom Cover Plate	01262806P	1
6	Drainage Pipe Sub-Assy	04362821	1
7	Water Tank Base	01892825	3
8	Water Pipe Joint (accessory)	06652838	1
9	Electric Heater	32110009	1
10	Thermostat	45048016	1
11	Drainage hose	05230012	1
12	Electric Box Cover	26902805	1
13	Gasket	75042802	1
14	Thermostat	45048003	1
15	Relief Valve	07382801	1
16	Cable Cross Loop	765100267	2
17	Toggle Switch Sheath	26902823	1
18	Gasket	7041280401	1
19	Magnesium Sub-Assy	04162801	1
20	Toggle Switch Sheath	2690282301	1
21	Temperature Sensor	3900028302	1
22	Gasket	70412804	2
23	Temp Sensor Pipe Sub-Assy	04162802	2
24	Toggle Switch Sheath	26242801	2

● Parts List of SXVD200LCJ/A-H for ER20000280

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	01262801P	1
2	Fixation Bracket (Outside)	01802819P	1
3	Body Of Outdoor Unit	0151283301P	1
4	Electric Box Assy	01392885	1
5	Bottom Cover Plate	01262806P	1
6	Drainage Pipe Sub-Assy	04362821	1
7	Water Tank Base	01892825	3
8	Water Pipe Joint (accessory)	06652838	1
9	Electric Heater	32110009	1
10	Thermostat	45048016	1
11	Drainage hose	05230012	1
12	Electric Box Cover	26902805	1
13	Gasket	75042802	1
14	Thermostat	45048003	1
15	Relief Valve	07382801	1
16	Cable Cross Loop	765100267	2
17	Toggle Switch Sheath	26902823	1
18	Gasket	7041280401	1
19	Magnesium Sub-Assy	04162801	1
20	Toggle Switch Sheath	2690282301	1
21	Temperature Sensor	3900028302	1
22	Gasket	70412804	2
23	Temp Sensor Pipe Sub-Assy	04162802	2
24	Toggle Switch Sheath	26242801	2

● Parts List of SXVD300LCJ/A-K for ER20000180

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	0126280102P	1
2	Fixation Bracket (Outside)	01802833P	1
3	Body Of Outdoor Unit	0151283401P	1
4	Electric Box Assy	01392865	1
5	Bottom Cover Plate	0126280602P	1
6	Drainage Pipe Sub-Assy	04362821	1
7	Water Tank Base	01892825	3
8	Water Pipe Joint (accessory)	06652838	1
9	Electric Heater	32110008	1
10	Thermostat	45048005	1
11	Drainage hose	05230012	1
12	Electric Box Cover	2690280501	1
13	Gasket	75042802	1
14	Thermostat	45048003	1
15	Relief Valve	07382801	1
16	Cable Cross Loop	765100267	2
17	Toggle Switch Sheath	26902823	1
18	Gasket	7041280401	1
19	Magnesium Sub-Assy	04162801	1
20	Toggle Switch Sheath	2690282301	1
21	Temperature Sensor	3900028302	1
22	Gasket	70412804	2
23	Temp Sensor Pipe Sub-Assy	04162802	2
24	Toggle Switch Sheath	26242801	2

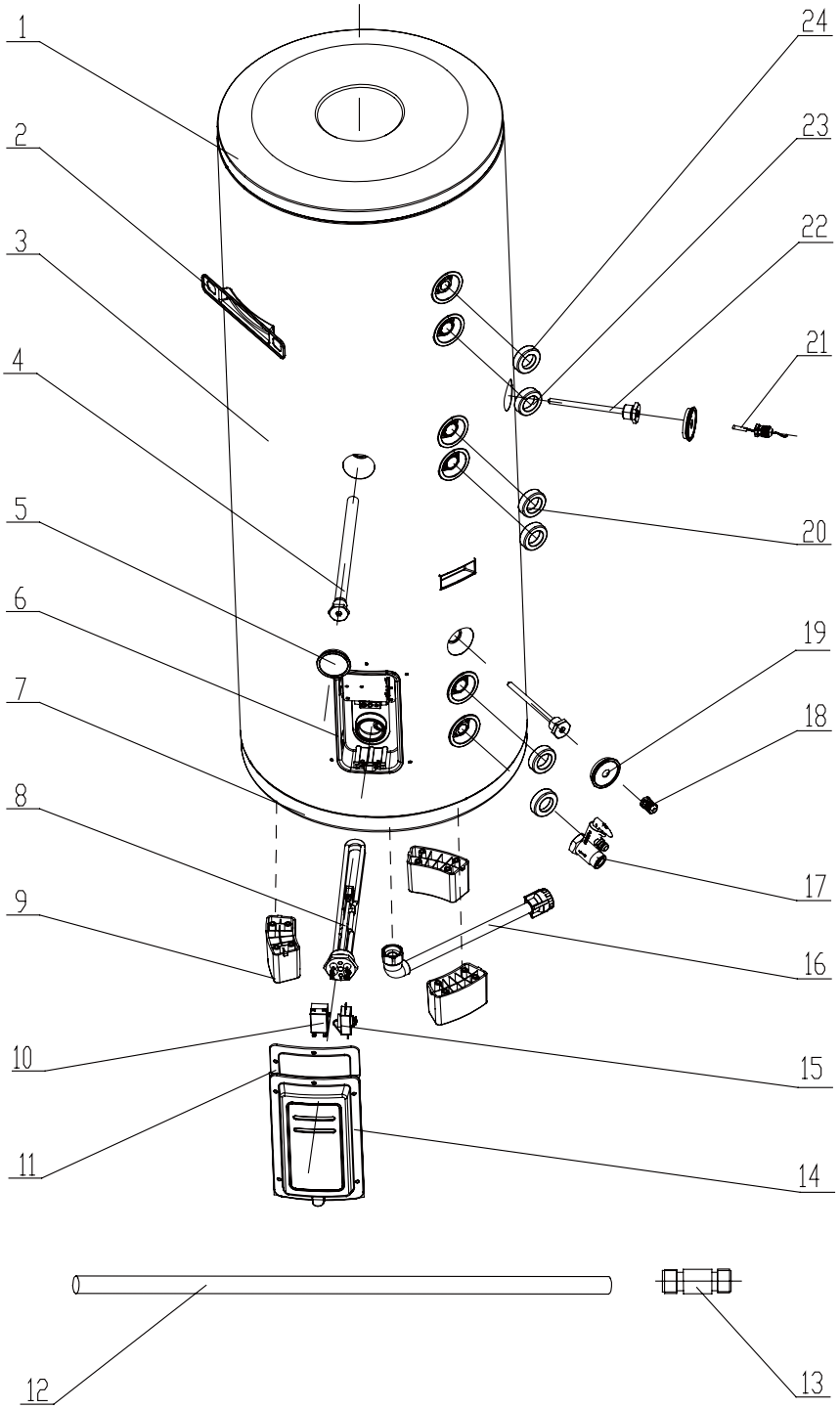
● Parts List of SXVD300LCJ/A-M for ER20000250

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	0126280102P	1
2	Fixation Bracket (Outside)	01802833P	1
3	Body Of Outdoor Unit	0151283401P	1
4	Electric Box Assy	01392885	1
5	Bottom Cover Plate	0126280602P	1
6	Drainage Pipe Sub-Assy	04362821	1
7	Water Tank Base	01892825	3
8	Water Pipe Joint (accessory)	06652838	1
9	Electric Heater	32110009	1
10	Thermostat	45048016	1
11	Drainage hose	05230012	1
12	Electric Box Cover	2690280501	1
13	Gasket	75042802	1
14	Thermostat	45048003	1
15	Relief Valve	07382801	1
16	Cable Cross Loop	765100267	2
17	Toggle Switch Sheath	26902823	1
18	Gasket	7041280401	1
19	Magnesium Sub-Assy	04162801	1
20	Toggle Switch Sheath	2690282301	1
21	Temperature Sensor	3900028302	1
22	Gasket	70412804	2
23	Temp Sensor Pipe Sub-Assy	04162802	2
24	Toggle Switch Sheath	26242801	2

● Parts List of SXVD300LCJ/A-H for ER20000300

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	0126280102P	1
2	Fixation Bracket (Outside)	01802833P	1
3	Body Of Outdoor Unit	0151283401P	1
4	Electric Box Assy	01392885	1
5	Bottom Cover Plate	0126280602P	1
6	Drainage Pipe Sub-Assy	04362821	1
7	Water Tank Base	01892825	3
8	Water Pipe Joint (accessory)	06652838	1
9	Electric Heater	32110009	1
10	Thermostat	45048016	1
11	Drainage hose	05230012	1
12	Electric Box Cover	2690280501	1
13	Gasket	75042802	1
14	Thermostat	45048003	1
15	Relief Valve	07382801	1
16	Cable Cross Loop	765100267	2
17	Toggle Switch Sheath	26902823	1
18	Gasket	7041280401	1
19	Magnesium Sub-Assy	04162801	1
20	Toggle Switch Sheath	2690282301	1
21	Temperature Sensor	3900028302	1
22	Gasket	70412804	2
23	Temp Sensor Pipe Sub-Assy	04162802	2
24	Toggle Switch Sheath	26242801	2

● Exploded View of SXVD200LCJ2/A-K, SXVD200LCJ2/A-M,SXVD200LCJ2/A-H, SXVD300LCJ2/A-K,SXVD300LCJ2/A-M and SXVD300LCJ2/A-H:



● Parts List of SXVD200LCJ2/A-K for ER20000170

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	01262801P	1
2	Fixation Bracket (Outside)	01802819P	1
3	Body Of Outdoor Unit	01512833P	1
4	Magnesium Sub-Assy	04162801	1
5	Gasket	7041280401	1
6	Electric Box Assy	01392865	1
7	Bottom Cover Plate	01262806P	1
8	Electric heater	32110008	1
9	Water Tank Base	01892825	3
10	Thermostat	45048005	1
11	Gasket	75042802	1
12	Drainage hose	05230012	1
13	Water Pipe Joint (accessory)	06652838	1
14	Electric Box Cover	26902805	1
15	Thermostat	45048003	1
16	Drainage Pipe Sub-Assy	04362821	1
17	Relief Valve	07382801	1
18	Cable Cross Loop	765100267	2
19	Gasket	70412804	2
20	Toggle Switch Sheath	26902823	2
21	Temperature Sensor	3900028302	1
22	Temp Sensor Pipe Sub-Assy	04162802	2
23	Toggle Switch Sheath	2690282301	2
24	Toggle Switch Sheath	26242801	2

● Parts List of SXVD200LCJ2/A-M for ER20000260

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	01262801P	1
2	Fixation Bracket (Outside)	01802819P	1
3	Body Of Outdoor Unit	01512833P	1
4	Magnesium Sub-Assy	04162801	1
5	Gasket	7041280401	1
6	Electric Box Assy	01392885	1
7	Bottom Cover Plate	01262806P	1
8	Electric heater	32110009	1
9	Water Tank Base	01892825	3
10	Thermostat	45048016	1
11	Gasket	75042802	1
12	Drainage hose	05230012	1
13	Water Pipe Joint (accessory)	06652838	1
14	Electric Box Cover	26902805	1
15	Thermostat	45048003	1
16	Drainage Pipe Sub-Assy	04362821	1
17	Relief Valve	07382801	1
18	Cable Cross Loop	765100267	2
19	Gasket	70412804	2
20	Toggle Switch Sheath	26902823	2
21	Temperature Sensor	3900028302	1
22	Temp Sensor Pipe Sub-Assy	04162802	2
23	Toggle Switch Sheath	2690282301	2
24	Toggle Switch Sheath	26242801	2

● Parts List of SXVD200LCJ2/A-H for ER20000290

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	01262801P	1
2	Fixation Bracket (Outside)	01802819P	1
3	Body Of Outdoor Unit	01512833P	1
4	Magnesium Sub-Assy	04162801	1
5	Gasket	7041280401	1
6	Electric Box Assy	01392885	1
7	Bottom Cover Plate	01262806P	1
8	Electric heater	32110009	1
9	Water Tank Base	01892825	3
10	Thermostat	45048016	1
11	Gasket	75042802	1
12	Drainage hose	05230012	1
13	Water Pipe Joint (accessory)	06652838	1
14	Electric Box Cover	26902805	1
15	Thermostat	45048003	1
16	Drainage Pipe Sub-Assy	04362821	1
17	Relief Valve	07382801	1
18	Cable Cross Loop	765100267	2
19	Gasket	70412804	2
20	Toggle Switch Sheath	26902823	2
21	Temperature Sensor	3900028302	1
22	Temp Sensor Pipe Sub-Assy	04162802	2
23	Toggle Switch Sheath	2690282301	2
24	Toggle Switch Sheath	26242801	2

● Parts List of SXVD300LCJ2/A-K for ER20000190

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	0126280102P	1
2	Fixation Bracket (Outside)	01802833P	1
3	Body Of Outdoor Unit	01512834P	1
4	Magnesium Sub-Assy	04162801	1
5	Gasket	7041280401	1
6	Electric Box Assy	01392865	1
7	Bottom Cover Plate	0126280602P	1
8	Electric heater	32110008	1
9	Water Tank Base	01892825	3
10	Thermostat	45048005	1
11	Gasket	75042802	1
12	Drainage hose	05230012	1
13	Water Pipe Joint (accessory)	06652838	1
14	Electric Box Cover	26902805	1
15	Thermostat	45048003	1
16	Drainage Pipe Sub-Assy	04362821	1
17	Relief Valve	07382801	1
18	Cable Cross Loop	765100267	2
19	Gasket	70412804	2
20	Toggle Switch Sheath	26902823	2
21	Temperature Sensor	3900028302	1
22	Temp Sensor Pipe Sub-Assy	04162802	2
23	Toggle Switch Sheath	2690282301	2
24	Toggle Switch Sheath	26242801	2

● Parts List of SXVD300LCJ2/A-M for ER20000270

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	0126280102P	1
2	Fixation Bracket (Outside)	01802833P	1
3	Body Of Outdoor Unit	01512834P	1
4	Magnesium Sub-Assy	04162801	1
5	Gasket	7041280401	1
6	Electric Box Assy	01392885	1
7	Bottom Cover Plate	0126280602P	1
8	Electric heater	32110009	1
9	Water Tank Base	01892825	3
10	Thermostat	45048016	1
11	Gasket	75042802	1
12	Drainage hose	05230012	1
13	Water Pipe Joint (accessory)	06652838	1
14	Electric Box Cover	2690280501	1
15	Thermostat	45048003	1
16	Drainage Pipe Sub-Assy	04362821	1
17	Relief Valve	07382801	1
18	Cable Cross Loop	765100267	2
19	Gasket	70412804	2
20	Toggle Switch Sheath	26902823	2
21	Temperature Sensor	3900028302	1
22	Temp Sensor Pipe Sub-Assy	04162802	2
23	Toggle Switch Sheath	2690282301	2
24	Toggle Switch Sheath	26242801	2

● Parts List of SXVD300LCJ2/A-H for ER20000310

No.	Name of part	Part code	Quantity
1	Bottom Cover Plate	0126280102P	1
2	Fixation Bracket (Outside)	01802833P	1
3	Body Of Outdoor Unit	01512834P	1
4	Magnesium Sub-Assy	04162801	1
5	Gasket	7041280401	1
6	Electric Box Assy	01392885	1
7	Bottom Cover Plate	0126280602P	1
8	Electric heater	32110009	1
9	Water Tank Base	01892825	3
10	Thermostat	45048016	1
11	Gasket	75042802	1
12	Drainage hose	05230012	1
13	Water Pipe Joint (accessory)	06652838	1
14	Electric Box Cover	2690280501	1
15	Thermostat	45048003	1
16	Drainage Pipe Sub-Assy	04362821	1
17	Relief Valve	07382801	1
18	Cable Cross Loop	765100267	2
19	Gasket	70412804	2
20	Toggle Switch Sheath	26902823	2
21	Temperature Sensor	3900028302	1
22	Temp Sensor Pipe Sub-Assy	04162802	2
23	Toggle Switch Sheath	2690282301	2
24	Toggle Switch Sheath	26242801	2

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